THE

# WORLD'S CYCLOPEDIA

AND

# LIBRARY

OF

# UNIVERSAL KNOWLEDGE

Apxle co Avδeρσoνos
Feb. 13/12. Lucy Phila

134

Archibald W. Anderson
709 Ferry St
Easton Pa

UNIVERSITY OF
ILLINOIS LIBRARY
AT URBANA-CHAMPAIGN
STACKS

# FLAGS OF VARIOUS NATIONS.

San Domingo, Mer.

Siam.

Belgium, Royal.

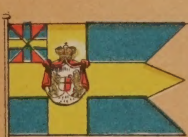
Belgium, Merchant.

Tunis, Man-of-war.

Turkey, Man-of-war.

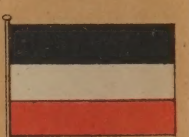
China.

Ecuador.


Sweden, Royal.

Sweden, Merchant.

Germany, Imp.

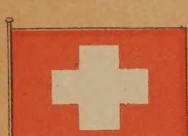

Germany, Merchant.

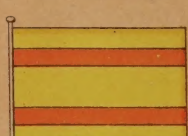
Uruguay.

Venezuela Merch.

Hawaiian Isl., Roy.

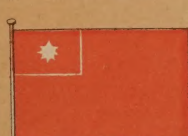
Hawaiian Isl., Mer.


Switzerland.


Spain, Merchant.

Liberia.

Mexico, Merchant.

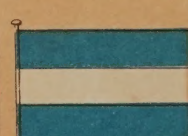

Turkey, Merchant.

U.S. of Colombia.

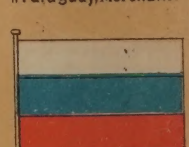
Norway, Merchant.

Paraguay, Merchant.

New Zealand.

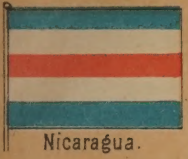

Honduras.

Russia, Imperial.


Russia, Merchant.

THE HATCH LITH. CO. NEW YORK.

# FLAGS OF VARIOUS NATIONS


Nicaragua.

Argentine Republic.

Austria, Imperial.

Austria, Merchant.

Brazil, Imperial.

Brazil, Ensign.

Bolivia.

Chili.

Egypt.

Denmark, Royal.

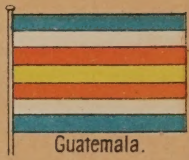
Denmark, Merchant.

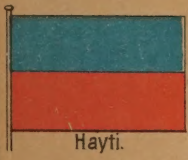
France.

Great Britain Royal.

Great Britain, Mer.

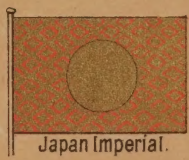
Greece, Merchant.

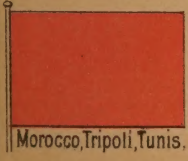

Guatemala.


Hayti.

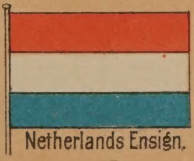
Italy Royal.

Italy, Merchant.


Japan Imperial.


Morocco, Tripoli, Tunis.

Netherlands Royal.


Netherlands Ensign.

Norway, Royal.

Persia.

Peru, Merchant.

Portugal, Royal.

Portugal, Ensign.

THE HATCH LITH. CO. NEW YORK.

—THE—

# World's Cyclopedia

## AND LIBRARY OF

# UNIVERSAL KNOWLEDGE.

CONTAINING A DESCRIPTION OF THE ELEMENTS AND INHABITANTS OF AIR, EARTH AND WATER; RISE AND FALL OF NATIONS; PLANETS, SUNS, MOONS, STARS, COMETS; COINS AND CURRENCY; WEIGHTS AND MEASURES; BANKING AND BROKERAGE; MILITARY, CIVIL, AND BRIDGE ENGINEERING AND SURVEYING; HUMAN ANATOMY AND PHYSIOLOGY; DISCOVERIES, ANIMALS, PLANTS, MINERALS; LEARNING, SCHOOLS, COLLEGES, CHURCHES; GOVERNMENTS; NATIONAL DEBTS; LAWS; LANDS; SHIPS; STORMS, TORNADOES, CYCLONES; FISHERIES; AND A MYRIAD OF OTHER SUBJECTS.

COMPILED BY

PROF. H. L. WILLIAMS,

(*Author of "Analysis of Gems," etc., etc.,*) *assisted by a number of leading Scientists and other learned Professors.*

NEW YORK:

WORLD MANUFACTURING CO., PUBLISHERS.

122 NASSAU STREET.

COPYRIGHT, 1884, BY S. C. THOMPSON.

031
W89311

# PREFACE.

The intent of the publishers and compilers has been to make a work to fill a void felt in almost every household; to furnish in a single book "an abstract and brief chronicle" of a multitude of things—many of which are difficult of access to the general reader, who is not the owner of a well-stocked library. Very carefully written essays are devoted to almost every art and science. In Natural History the discoveries of Linnæus, Cuvier, and later savants are given, in a style to please as well as instruct. Space is given to many subjects too often treated as specialities, and relegated to text-books: notably, Vocabularies of Business; Spelling and Pronunciation of Ancient Geographical Names; and explanation of Legal and other Phrases in Latin. A Biographical Dictionary furnishes much interesting information. Considerable attention has been given to a vast number of topics, embracing almost all theoretical and practical questions relating to government, law, finance, commerce, agriculture : upon which subjects every person is often called to think, talk, or

write about; yet which rarely enter into the range of an ordinary education. Care has been taken to simplify and thus render easier of comprehension, all the branches of mechanics, learning, and science, which from their nature are intricate and complex; so that a plainly educated person can at once clearly understand involved questions, too often obscured by unnecessary technical phrases. Numerous well-executed engravings illustrate the letter press.

THE COMPILER.

**A**, the first letter of the alphabet of all the known languages, except the Ethiopic, in which it is the thirteenth and the Runic in which it is the tenth. It stands for the indefinite article as, a man; for the sixth note in the gamut, for the first of the dominical letters in the calender, as a numeral for one among the Greeks and 500 among the Romans, or with a stroke over it $\bar{A}$, 5,000, for an abreviation, as A. M. Artium, Magister, Master of Arts,

A. A. A. In Chemistry stands for Almagam or Amalgamation.

A. 1. A mark to denote a ship of the first-class, as to newness and being seaworthy.

AAM. A Dutch measure of liquids, varying from 35 to 41 English gallons.

AARD-VARK. An edentate animal, a native of Southern Africa.

AARD-WOLF. A carniferous animal intermediate between the Civit and the Hyena.

AAVORA. The fruit of a species of West Indian palm tree.

AB. The Hebrew name of father. In the Jewish calendar, the 11th month of the civil year, and the fifth of the ecclesiastical year, answering to a part of July and of August. In the Syriac calendar, Ab is the last summer month.

ABABILO. A fabulous animal which has the feet of a dog and the beak of a bird, mentioned in the Koran.

ABACA. A kind of flax, which grows in the Philippine Islands.

ABACAY. The calangay, a species of parrot.

ABACISCUS. In archæology, any flat member, the square compartment of a Mosaic pavement.

ABACUS. An instrument for calculation, consisting of a board of an oblong figure, divided by several lines or wires, and mounted with an equal number of balls arranged so as to express units, tens, hundreds, thousands, &c. The ball on the lowest line expresses 1; each of those on the second line, 10, &c.; those in the middle spaces, half as much as those on the lines above them,

ABADA. A species of large African Deer, which has two horns on its forehead and a third on the nape of its neck.

ABBEVILLE FLINTS. Rude flint implements in the form of spear-heads, &c., found in great abundance in the post-tertiary sands and gravels of the river Somme near Abbeville, in France.

ABDALAVI. The Egyptian melon.

ABDALS. Certain religious fanatics in Persia and other Mohammedan countries, who occasionally rush into the streets, and attempt to kill all they meet who are of a different religion to themselves.

ABDERITE. An inhabitant of Abaera, in Thrace. Democritus is called from being a native of this town, and as he was much prone to laughter, foolish or incessant laughter has been termed abderian.

ABELIANS, ABELONIANS, or ABELITES. In church history, a sect which arose in Africa during the reign of Arcadius; they married, but lived in continence, after the manner, as they pretended, of Abel, and attempted to maintain the sect by adopting the children of others.

ABERRATION. A small apparent motion in the fixed stars, discovered by Mr. Molyneux and Dr. Bradley in the year 1725; also a deviation of the rays of light, when inflected by a speculum by

which they are prevented meeting in the same point

ABETTOR. One who instigates another to commit a crime.

ABEYANCE. The expectancy of an estate, honour, or title.

ABJURATION. A declaration on oath, that the son of James II. and his issue have no right to the throne of Great Britain; also a voluntary banishment, or leaving the realm on oath never to return.

ABLACTATION. A sort of engrafting trees, by leaving the graft on its proper stock, until it be fully incorporated with the new stock.

ABLATIVE. The sixth case of nouns in grammar.

ABLUTION. A religious ceremony of washing the body, still used by the Turks and Mahomedans; also the washing away the superfluous salts out of any body in chemistry.

ABOLLA. A kind of military garment worn by the Greek and Roman soldiers.

ABOMASUS (in Comparative Anatomy). The fourth stomach of ruminating animals.

ABORIGINES. The ancient and original inhabitants of Italy, supposed to have been conducted into Latium by Saturn; also the original inhabitants of any country In America we call the native Indians, Aborigines.

ABOUT. A sea term, signifying the situation of a ship immediately after she has tacked.

ABRAUM. A kind of red clay used by cabinet-makers to deepen the colour of new mohogany.

ABREAST. Side by side; a sea term, applied to two or more ships ranged together.

ABRIDGING (in Algebra). The reducing a compound equation to a more simple form.

ABRIDGMENT. The bringing the contents of a book within a short compass; in Law, the shortening a count or declaration.

ABSCESS. An inflammatory tumour containing purulent matter.

ABSCISSE. The part of any diameter or axis of a curved line, cut off by a perpendicular line, called the ordinate.

ABSOLUTION. The forgiveness of sins, which the Romish Church claims to itself the power of granting; in Civil Law, a sentence whereby the party accused is declared innocent of the crime laid to his charge.

ABSORBENTS. Medicines that have the power of drying up redundant humours; also what causes acids to effervesce, as quick lime, soda, &c.

ABSORBENT VESSELS. Vessels which carry any fluid into the blood, as the inhalent arteries.

ABSORPTION (in Chemistry). The conversion of a gaseous fluid into a liquid or solid, on being united with some other solid.

ABSTERGENTS. Medicines for cleansing the body from impurities.

ABSTINENCE. An abstaining from meat diet, as practised in the Romish Church.

ABSTRACTION (in Logic). The intellectual act of separating accidents or qualities from the subjects in which they reside, as whiteness from snow or a wall &c.; animal from man or the brutes; in Chemistry, the process of drawing off by distillation any part of a compound, and returning it again any number of times to be redistilled.

ABUTMENTS. The extremities of any body adjoining another, as the extremities of a bridge resting on the banks or sides of a river.

ABYSS. Any deep place that is bottomless, or supposed to be so, as the deepest or unfathomable parts of the sea.

ACACIA. A beautiful shrub, a species of which bears rose-coloured flowers. A thorny shrub of this name is common in the deserts of Asia and Africa, and produces gum Arabic.

ACADEMICS. A sect of ancient philosophers; the term is sometimes applied to the followers of Socrates and Plato.

ACADEMY. A school or college for the improvement of arts and science, so called from the grove of Academus in Athens, where Plato kept his school of philosophy. The first modern school of this name is said to have been established by Charlemagne at the instance of Alcuin, an English monk. This was followed by the Academia Secretorum Naturæ, established at Naples by Baptista Porta in 1560, and the Academia Lyncei at Rome, &c.

ACANTHUS (in Botany). Bearsbreech, or Brank Ursine, a plant, the leaves of which resemble those of the thistle; in Architecture, an ornament representing the leaves of the ancient acanthus, and used in the capitals of the Corinthian and Composite orders.

ACCELERATION. Increased velocity of motion, particularly applied to falling bodies tending towards the centre of the earth by the force of gravity.

ACCENT. The raising or lowering of the voice in pronouncing certain words or syllables; also the marks on the words or syllables, as the acute accent marked thus

(′), the grave accent thus (`), the circumflex thus (^).

ACCEPTANCE. The signing or subscribing a bill of exchange with the word 'accepted,' and one's name, by which the acceptor obliges himself to pay the contents of the bill.

ACCESSARY, or ACCESSORY (in Law). One guilty of an offence, not principally, but by participation.

ACCIDENCE. The rules of the inflexions of nouns and conjugations of verbs arranged in grammatical order.

ACCIDENT. That which belongs accidentally, not essentially, to a thing, as sweetness, softness, &c.; in Grammar, the termination of words.

ACCIPITRES. The first order of birds, having an angular toothlike process on the upper mandible, as the vulture, falcon, owl, &c.

ACCLAMATION. A shouting in concert, which was practised among the Romans as a token of applause, particularly in the theatres.

ACEPHALOCYST. A genus of Entozoa or intestinal animal which has the appearance of a simple bladder, without any visable organs.

ACELDAMA. In Hebrew, the field of blood; a field said to have lain south of Jerusalem, and thus called, because purchased with the bribe which Judas took for betraying his Master.

ACEPHALAN, or ACEPHALA. A class of mollusca having no head, as the oyster, scallop, mussel, &c. Also, an order of insects.

ACEPHALI, or ACEPHALITES. In ecclesiastical history, a name given to several sects who refused to follow some noted leader; also, to churchmen who were under no bishop. In English history, certain levellers in the reign of Henry I. who acknowledged no head or superior. In old law, men who held lands of no particular lords, that is, not in fee.

ACETATES. A kind of salts formed by the combination of acetic acid with a salifiable base, as the acetate of potash.

ACETIC ACID. Radical vinegar, or the strongest acid of vinegar.

ACHROMATIC. Colourless, a term applied to telescopes which were first contrived by Dr. Bevis, to remedy the aberrations of colour.

ACIDIFIABLE. An epithet signifying capable of being converted into an acid by an acidifying principle; an acidifiable base or radical is any substance that is capable of uniting with such a quantity of oxygen as to become possessed of acid properties.

ACIDS. Substances which are in taste sour, change blue vegetable colours to red, and combine with all the alkalis, and most of the metallic oxides and earths, so as to form the compounds called salts. Acids are distinguished according to the proportion of oxygen which they contain, by the terminations *ic* and *ous*, as nitric acid, and nitrous acid, sulphuric acid, and sulphurous acid, the former of which denotes the larger dose or portion of oxygen, and the latter the smaller; when the syllable hypo is added to either of these, it denotes a degree below it in point of oxidizement, as hyposulphuric acid, an intermediate between the sulphuric and the sulphurous acid.

ACONITE, WOLFSBANE, or MONKSHOOD. A plant, the flower of which resembles the hood of a monk; it is a violent poison.

ACOUSTICS. That branch of science which treats of the nature and modifications of sound.

ACQUITTAL. A deliverance or setting free from the suspicion of guilt, as where a person, on the verdict of a jury, is found not guilty.

ACQUITTANCE. A written discharge for a sum of money that has been paid.

ACRE. A measure of land containing four square roods or 160 square poles of 5 yards and a half, or 4840 square yards. The French acre is equal to one and a quarter of an English acre.

ACROSTIC. A set of verses, the first letters of which compose some name, title, or motto.

ACTION (in Physics). The pressure or percussion of one body against another. By a law of nature, action and reaction are equal; that is, the resistance of the body moved is always equal to the force communicated to it.

ACTION (in Rhetoric). The carriage and motion of the body, and the modulation of the speaker's voice in delivering an address

ACTINIA. A genus of Acalephans or polypes, which have a soft fleshy body, frequently ornamented with bright colors, and numerous tentacles or rays extending from their mouth, or centre, like the petals of a double flower; and hence they have the popular names of sea-anemones and animal-flowers.

ACTINOLITE. In mineralogy, ray-stone; a bright green variety of horn-blende, occurring usually in glassy, prismatic crystals, and also fibrous.—Actinoliteschist, a metamorphic rock, consisting chiefly of actinolite, with a mixture of mica, quartz, or felspar.

ACTINOMETER. An instrument for measuring the intensity of the sun's rays.

ADANSONIA. The Ethiopian sour gourd, monkey's bread, or African cala-bash-tree. It is considered to be the largest of trees. It seldom exceeds 18 feet in height, but its circumference is often upwards of 75 feet.

ADAPIS. An extinct pachydermatous animal, resembling a hedge-hog.

ACUPUNCTURATION. A method of bleeding, in use among the Chinese and Japanese, by making punctures or pricks with a gold or silver needle in any part of the body. It is chiefly employed in head-aches, convulsions, lethargies, &c.

A. D. Anno Domini, In the Year of our Lord.

ADAGIO. Softly, leisurely; a term in music books, denoting the lowest time except the grave, as adagio, adagio.'

ADAMANT. The hardest sort of diamond.

ADAMANTINE SPAR. A sort of earth brought from India and China, that is of the hardness of adamant.

ADDER. A small poisonous serpent with plaits on the belly, and scales under the tail; it is not rare in Britain.

ADDITION. The first of the four fundamental rules in arithmetic, whereby several small sums are added or collected into one that is larger.

ADHESION. The property of certain bodies to attact other bodies to themselves, or the force by which they adhere to each other. Adhesion denotes a union to a certain point between two distinct bodies; cohesion, the union of the parts of the same body so as to form one mass.

AD INFINITUM. Indefinitely, or to infinity.

ADIPOCERE. A substance resembling spermaceti, which is formed from an animal in its progress towards decomposition.

ADIT. The shaft or entrance into a mine.

ADJECTIVE. A part of speech in grammar, which is added to a noun to qualify its signification, as bitter, sweet, &c.

ADJUTANT One who assists a superior officer in a regiment; the adjutant-general assists the general with his counse. and personal service. Also a very large bird of the heron species, common in India and New Holland.

AD LIBITUM. At pleasure

ADMEASUREMENT (in Law.) A writ against those who usurp more than their own share, as the Admeasurement of Pasture, or the Admeasurement of Dower.

ADMINISTRATOR (in Law). The person to whom the estate and effects of an intestate are committed, for which he is to be accountable when required.

ADMINICULUM. In natural history, a term applied to the abdominal semicircular row of teeth, which enables certain subterranean insects to force their way to the surface.

ADMETUS. In Mythology, a King of Pherae, in Thessaly, and one of the Argonants who was at the hunt of the Calydonian boar.

ADNA. In malacology, a term applied to those cut-shaped shells found attached to stones on the sea-coast; a genus of Balani or Barnacles.

ADNASCENT. In botany, growing to or on.

ADNATE. Growing close to a stem.

ADMONITIO FUSTIUM. A punishment among the Romans, which consisted in beating the offender with vine branches.

ADONAI. The name of Jehovah among the Jews.

ADONIS. A beautiful youth, the favourite of Venus, who was killed by a wild boar.

ADOPTION. A practice among the Greeks and Romans, of making a person one's heir, and investing him with all the rights and privileges of a son.

ADORATION. A mode of reverence or worship anciently shown to the gods by raising the right hand to the mouth, and gently applying it to the lips; also, in general, any outward sign of worship, by kissing the hand or feet, walking barefoot, and the like.

AD VALOREM. According to the value.

ADVANCE (in Commerce). Money paid before goods are delivered, work done, or any consideration given.

ADVANCED-GUARD, or VAN-GUARD (in the Military Art). The first line or division of an army ranged or marching in order of battle.

ADVENT. The coming of our Saviour; also the festival commemorative of the Advent, which falls about a month before Christmas.

ADVERB. A part of speech in gram

mar, added to a verb to complete its signification, as largely, neatly, &c.

ADVERSARIA. A term among literary men for a common-place book, wherein they enter whatever occurs to them in reading or conversation that is worthy of notice.

ADVERTISEMENT. Any printed publication of circumstances, either of public or private interest, particularly that inserted in the newspapers.

ADULT (in Civil Law). Any person between the ages of fourteen and twenty-five.

ADULTERATION. The debasing of the coin by the mixture of impure metals; also the debasing and corrupting any article of trade by putting improper ingredients in it, as is done very frequently.

ADYTUM. The inner and most sacred part of the ancient heathen temples. None but the priests were permitted to enter it, and from thence the oracles were delivered. The Jewish Holy of Holies was a similar part of the Temple of Jerusalem.

ADVOWSON (in Law). A right of presentation to a vacant church or benefice. He who possesses this right is called the patron of the living.

ÆDILE. A Roman magistrate who had the charge of all public buildings, particularly temples and theatres, also of all streets, highways, &c.

ÆGIS. A shield, particularly Jupiter's shield.

ÆNEID. The title of Virgil's poem, in which he celebrates the adventures of Æneas.

ÆOLIAN HARP. A number of strings so disposed as to produce a set of musical tones by the action of the wind upon them.

ÆOLIC DIALECT. One of the five dialects of the Greek tongue.

ÆOLIPILE. A hollow metal ball with a slender pipe, used to show the convertibility of water into steam

ÆRA, or ERA. Any date, period, or event from which a calculation of years is made to commence. The principal æras are the vulgar, or Christian æra, dated from the birth of our Saviour; the æra of the creation, dated by Usher and most chronologists 4004 years before the vulgar æra; the æra of the Olympiads, dated about 776 years before the vulgar æra; the æra of the building of Rome, according to Varro, is 753 years before Christ; the æra of Nabonassar, so dated from Nabonassar the first king of Babylon, 747 years before Christ; the æra of the Hegira, or the Mahometan æra, dated from the hegira or flight of Mahomet from Mecca dated about 622 years after Christ, or the vulgar æra.

AEROLITES. Air stones, or meteoric stones falling from the atmosphere. These are semimetallic substances, the descent of which, though mentioned several times in history, has not been authenticated until these few years. The fact is, however, by recent and frequent observations now put beyond all doubt Two showers of stones are recorded by Livy and Julius Obsequens to have happened at Rome in the reign of Tullus Hostilius, and during the consulate of C. Martius and M. Torquatus; a shower of iron, in Lucania, mentioned by Pliny, and a shower of mercury by Dion. Among the moderns, Carden speaks of about 12,000 stones, one of 120 lbs. another of 60 lbs. that fell at Padua in Italy, in 1510; Gassendi, of a stone of 59 lbs. on Mount Vaiser in Provence; Muschenbrock of two large stones in Ireland; St. Amand de Baudin and others of a great shower of stones in the environs of Agen, in 1790; the earl of Bristol of twelve stones at Sienna in Tuscany, in 1794; captain Topham of a stone of 56 lbs. at Wold Cottage in Yorkshire, in 1795; Dr. Southey of a stone of 10 lbs. in Portugal, in 1796; Philosophical Magazine, of a mass of iron 70 cubic feet, in America, in 1800; and M. Fourcroy of several stones from 10 lbs to 17 lbs. that fell near L'Aigle in Normandy, besides other instances equally well attested. The larger sort of these stones have been seen as luminous bodies to move with great velocity, descending in an oblique direction, and frequently with a loud hissing noise, resembling that of a mortar shell when projected from a piece or ordnance. About the year 1807, a luminous body of this kind passed over Connecticut, and exploded with a loud noise like thunder, and large masses of stones fell in Weston in that state, specimens of which are in the Cabinet of Yale College. Though different from every other known terrestrial substance, yet these stones perfectly resemble each other, having the same appearance of semimetallic matter, coated on the outside with a thin black incrustation, and being in their chymical composition very similar. The stone which fell at L'Aigle in France, in 1803, was found to contain of silica 54 parts, oxyde of iron 36, magnesia 9, oxyde of nickel 3, sulphur 2, lime 1; their specific gravity is also nearly the same, being about 3 and a half that of common water.

AERONAUT. One who sails or floats in the air in a balloon.

AEROSTATION. The modern art of

raising bodies into and navigating the air, by means of rarefied air collected within an envelope, commonly called a balloon (see BALLOON).

AEROSTATION, HISTORY OF. This art is founded on the principle that any body which is specifically lighter than the atmospheric air will be buoyed up by it and ascend; a principle which had doubtless long been known, although the application of it to any practical purpose is altogether a modern invention. It is true that we read of the attempt which was made by Dædalus and his son Icarus to pass through the air by means of artificial wings, in which the former is said to have succeeded, but this is commonly reckoned among the fables of the ancients. Dr. Black, in his lectures in 1767 and 1768, was the first who, after Mr. Cavendish's discovery of the specific gravity of inflammable air, threw out the suggestion that if a bladder, sufficiently light and thin, were filled with air, it would form a mass lighter than the same bulk of atmospheric air, and rise in it. But want of leisure prevented him from trying the experiment, the honour of which belonged to Mr. Cavallo, who communicated the result to the Royal Society, on the 20th of June in that year. After having made several unsuccessful experiments with bladders and skins, he succeeded at length in making soap balls, which being inflated with inflammable air, by dipping the end of a small glass tube, connected with a bladder containing the air, into a thick solution of soap, and gently compressing the bladder, ascended rapidly. These were the first sort of inflammable air balloons that were made. But while philosophers in Britain were thus engaged in experiments on this subject, two brothers, in France, Stephen and John Montgolfier, paper manufacturers of Annonay, had made rapid advances towards carrying the project into execution. Their idea was to form an artificial cloud by enclosing smoke in a fine silk bag; and having applied burning paper to an aperture at the bottom, the air thus became rarefied, and the bag ascended to the height of 70 feet. This experiment was made at Avignon, about the middle of the year 1782, and was followed by other experiments, all tending to prove the practicability of the scheme. An immense bag of linen, lined with paper, and containing upwards of 23,000 cubic ft., was found to have a power of lifting about 500 pounds, including its own weight. Burning chopped straw and wool under the aperture of the machine caused it to swell and ascend in the space of ten minutes to the height of 6000 feet: when exhausted, it fell to the ground at the distance of some thousand feet from the place where it ascended. In an experiment tried before the Academy of Sciences, a large balloon was made to lift eight persons from the ground, who would have been carried away had the machine not been kept down with force On the repetition of the experiment before the king at Versailles, with a balloon near 60 feet high and 43 in diameter, a sheep, a cock, and a duck, the first animals that ever ascended in a balloon, were carried up about 1440 feet, and after remaining in the air about eight minutes, came to the ground in perfect safety, at the distance of 10,200 feet from the place of ascent. Emboldened by this experiment, M. Pilatre de Rozier offered himself to be the first aerial adventurer. A new machine was accordingly prepared, with a gallery and grate, &c. to enable the person ascending to supply the fire with fuel, and thus keep up the machine as long as he pleased. On the 15th of October, 1783, M. Pilatre took his seat in the gallery, and, the machine being inflated, he rose to the height of 84 feet, and, after keeping it afloat about four minutes and a half, he gently descended: he then rose again to the height of 210 feet, and the third time 262. In the descent, a gust of wind having blown the machine over some large trees, M. Pilatre extricated himself by throwing straw and wool on the fire, which raised him at once to a sufficient height, and in this manner he found himself able to ascend or descend to a certain height at pleasure. Some time after he ascended with M Girond de Vilette to the height of 330 feet, hovering over Paris at least nine minutes, in sight of all the inhabitants, and the machine keeping all the while a steady position. In 1783, he undertook a third aerial voyage with the Marquis d'Ariandes, and in the space of twenty-five minutes went about five miles In this voyage they met with several different currents of air, the effect of which was to give a very sensible shock to the machine They were also in danger of having the machine burnt altogether, if the fire had not been quickly extinguished by means of a sponge. After this period aerostatic machines were elevated by inflammable air enclosed, instead of fire, with which Messrs Roberts and Charles made the first experiment. In this case the bag was composed of lutestring varnished over with a solution of elastic gum, called caoutchouc, and was about 13 English feet in diameter After being filled with considerable difficulty it was found to be 35 pounds lighter

than an equal bulk of common air. With this they ascended, and in three quarters of an hour traversed fifteen miles. Their sudden descent was occasioned by a rupture which happened to the machine when it was at its greatest height On a subsequent day the same gentlemen made an ascent in a balloon filled with inflammable air. This machine was formed of gores of silk, covered with a varnish of caoutchouc, of a spherical figure, and measuring 27 feet 6 inches in diameter. A net was spread over the upper hemisphere, and fastened to a hoop which passed round the middle of the balloon. To this a sort of car was suspended, a few feet below the lower part of the balloon: and in order to prevent the bursting of the machine, a valve was placed in it, by opening of which some of the inflammable air might be allowed to escape. In the car, which was of basket-work, and covered with linen, the two adventurers took their seats in the afternoon of the 1st of December, 1783. At the time the balloon rose the barometer was at 30°. 18′. and it continued rising until the barometer fell to 27°, from which they calculated that they had ascended 600 yards. By throwing out ballast occasionally they found it practicable to keep nearly the same distance from the earth during the rest of their voyage, the mercury fluctuating between 27° and 27° 65′, and the thermometer between 53° and 57° the whole time. They continued in the air an hour and three quarters, and alighted at the distance of 27 miles from Paris, having suffered no inconvenience, nor experienced any of the contrary currents described by the marquis d'Arlandes. M. Roberts having alighted, and much of the inflammable gas still remaining, M. Charles determined on taking another voyage. No sooner therefore was the balloon thus lightened of 130 pounds of its weight, than it arose with immense velocity, and in 20 minutes was 9000 feet above the earth, and out of sight of all terrestrial objects. The globe, which had become flaccid, now began to swell, and when M. Charles drew the valve, to prevent the balloon from bursting, the inflammable gas, which was much warmer than the external air, for a time diffused a warmth around, but afterwards, a considerable change was observable in the temperature. His fingers were benumbed with cold, which also occasioned a pain in his right ear and jaw, but the beauty of the prospect compensated for these inconveniences. The sun, which had been set on his ascent, became again visible for a short time, in consequence of the height which he had reached. He saw for a few seconds vapours rising from the valleys and rivers. The clouds seemed to rise from the earth, and collect one upon the other; only their colour was gray and obscure from the dimness of the light. By the light of the moon he perceived that the machine was turning round with him, and that there were contrary currents which brought him back again: he also observed with surprise, that the wind caused his banners to point upwards, although he was neither rising nor descending, but moving horizontally. On alighting in a field about three miles distant from the place where he set out, he calculated that he had ascended, at this time not less than 10,500 feet. Hitherto all experiments of this kind had been unattended with any evil consequences, but an attempt which was made to put a small aerostatic machine with rarefied air under an inflammable air balloon, proved fatal to the adventurers, M. Pilatre de Rozier and M. Romaine. Their inflammable air balloon was about 37 feet in diameter, and the power of the rarefied air one was equivalent to about 60 pounds They were not long in the air when the inflammable air balloon was seen to swell considerably, and the aeronauts were observed, by means of telescopes, to be very anxious to descend, and busied in pulling the valve and giving every possible facility of escape to the inflammable air, but, in spite of all their endeavours, the balloon took fire without any explosion, and the unfortunate gentlemen were precipitated to the earth at the height of about three quarters of a mile. M. Pilatre seemed to have been dead before he came to the ground; but M. Romaine was found to be alive, although he expired immediately after. The ill success of this experiment, which had been made for the purpose of diminishing the expense of inflating the machine with gas, did not interrupt the progress of aerostation. Aerial voyages continued to be made on the old scheme The first trial in England was made by Vincent Lunardi, an Italian, on the 15th of September, 1784. His balloon, the diameter of which was 33 feet, was made of oiled silk, painted in alternate stripes of blue and red. From a net, which went over about two thirds of the balloon, descended 45 cords to a hoop hanging below it, and to which the gallery was attached. Instead of a valve, the aperture at the neck of the balloon, which was in the shape of a pear, served for admitting or letting out the inflammable air. The air for filling the balloon was produced from zinc, by means of diluted vitriolic acid M Lunardi

ascended from the Artillery Ground, at two o'clock, having with him a dog, a cat, and a pigeon. He was obliged to throw out some of his ballast, in order to clear the houses, when he rose to a considerable height, proceeding first N. W. by W. and then nearly N. About half after three he descended very near the earth, and landed the cat, which was half dead with the cold; he then reascended by throwing out some more of his ballast, and ten minutes past four he alighted in a meadow near Ware, in Hertfordshire. His thermometer stood in the course of his voyage as low as 29°. and he observed that the drops of water collected round the balloon were frozen. The second aerial voyage in England was performed by Mr. Blanchard, on the 16th of October in the same year, in which he was accompanied by Mr. Shelden, professor of anatomy at the Royal Academy, the first Englishman that adventured in such an excursion. They ascended a few minutes past 12 o'clock, and after proceeding about 14 miles beyond Chelsea, Mr. Blanchard landed Mr. Sheldon, reascended alone, and finally landed near Rumsey, in Hampshire, about 75 miles from London, which was at the rate of about 20 miles an hour Mr. Blanchard ascended so high, that he felt a difficulty in breathing; and a pigeon, which flew from the boat, laboured for some time to sustain itself, but was at length compelled to return and rest on the boat

Aerial voyages now became frequent in England and elsewhere, and afforded nothing worthy of notice before the ascent of M. Garnerin, in 1802, who undertook the singular and desperate experiment of descending by means of a parachute (See PARACHUTE.) In this descent it was observed that the parachute, with the appendage of cords and the basket in which M. Garnerin had seated himself, vibrated like the pendulum of a clock, and at times the vibrations were so violent, that more than once the parachute and the basket seemed to be on the same level, or quite horizontal, which presented a terrific spectacle of danger to the spectator. They diminished, however, as M. Garnerin approached the earth, and he was landed in safety, though strongly affected with the violent shocks that his frame had experienced. Various excursions have since been made by Mr. Sadler, Mr Green, and others.

AETITES, or EAGLE-STONE. A stone so called, because it was originally found in eagles' nests It is a sort of ore of a kidney shape, imbedded in iron-shot clay.

AFFECTUOSO. In an affecting style: a term in music books at the beginning of a movement.

AGALLOCH, or AGALLOCHUM. Aloes-wood, the product of a tree growing in China, and some of the Indian Isles. There are three varieties, the calambac, the common lignum aloes, and the calambour. The first of these is light and porous, and so filled with a fragrant resin, that it may be moulded by the fingers; the second is denser and less resinous; and the third is the aloes-wood used by cabinet-makers, &c.

AGALMATOLITE. A soft stone, a subspecies of mica of various colors, which different mineralogists severally term soap-stone, lard-stone, steatite, talc graphique, &c. It contains no magnesia, but otherwise has all the characters of talc. The best specimens are brought from China. It is used in that country in the manufacture of images.

AGAMI. A remarkable bird, inhabiting the woods of Central America. It is of the size of a large fowl, has a short tail, and long legs, and runs with great speed. It is sometimes otherwise called the gold-breasted trumpeter.

AGATE. A precious stone, first found in Sicily; it is a mineral composed of various substances, as chalcedony, cornelian, jasper, &c.; also a stone of the agate kind engraven by art, which constitutes among antiquarians a species of gems.

AGE. A certain period or limit of time, marked for the convenience of chronology and history by some remarkable events Chronologers commonly reckon seven such ages, namely, 1. From the creation to the deluge. 2. From the deluge to the birth of Abraham. 3. From the birth of Abraham to the departure of the Israelites out of Egypt. 4. From the departure of the Israelites to the building of the temple by Solomon. 5. From the laying the foundation of the temple to the reign of Cyrus in Babylon. 6. From the reign of Cyrus to the coming of Christ. 7. Since the birth of our Saviour. Chronologers are generally agreed as to the dividing the time from the creation into seven ages, but they differ materially as to the time contained in these periods. The poets distinguished the period of the world into four ages; namely, into the golden age, or the age of simplicity and happiness; the silver age, which was inferior to the golden age in enjoyments; in this age man began to till the ground for their sustenance. In the brazen age strifes and contentions began, which, in the iron, were carried to the utmost extent, and accompanied with every evil that afflicts mankind. It is most probable that this notion of the four ages was taken from the history of the golden image, seen by Neb-

nebadnezzar in a dream, mentioned in Daniel, by which the first monarchy was denoted the golden one, the second silver, the third brazen, and the fourth iron. The Greeks, who derived their mythology from the Egyptians, doubtless gathered this idea from the same source, and wrought it into a fable by the ingenuity of their poets.

AGE. A term in law for those special times which enable men and women to do that which they could not do before; thus, in England, a man may take the oath of allegiance at twelve years of age, is at the age of discretion at fourteen to choose his guardian and contract a marriage, and is at full age at twenty-one. A woman at the age of nine is dowable, at twelve may confirm her consent to marriage, at fourteen may receive her land into her own hands, and at twenty-one may alienate her lands and tenements. The laws in the United States, are similar.

AGENT (in Law). A person empowered to act for another

AGENT (in Physics). Any thing having the power to act on another object, as cold or heat.

AGGREGATE. An order of plants in the Linnæan system, having compound flowers with separate anthers.

AGGREGATION (in Chemistry). The adhesion of parts of the same kind; as pieces of sulphur united by fusion form an aggregate.

AGIO. A term used chiefly in Holland and Venice, to denote the difference between the bank money and the current money, or cash; as when a merchant stipulates to receive for his goods 100 livres bank money or 105 cash, or current money, the agio is said to be 5 per cent.

AGRICULTURE. The art of tilling the land according to certain rules of experience and science.

AGRICULTURE, History of. As the ground was, by divine appointment, to furnish subsistence for man, and after his fall he was doomed to procure it by labour, husbandry, or the practical part of agriculture, was of necessity the first and most important occupation of the descendants of Adam; wherefore we learn from Scripture, that his two sons, Abel and Cain, were both employed in this manner, the former being a keeper of sheep, and the latter a tiller of the ground. With what implements this work of tillage was carried on, and what degree of art was employed in producing the fruits of the earth, is left to conjecture; but writers on those early periods are generally agreed that the antediluvians were in possession of many arts and inventions which were in process of time lost, or at least but imperfectly retained among the different nations that were scattered abroad after the confusion of tongues Agriculture was one of the arts which Noah and his posterity retained; for we find that he cultivated the vine. Those of the line of Shem appear to have followed the breeding and feeding of cattle: but those of the line of Ham, who took possession of Egypt, applied themselves to the tilling of the ground, and with so much ingenuity, industry, and success, that, owing to the inundations of the Nile, and the consequent fertility of the soil, Egypt was enabled in the time of Abraham, and still more so in the time of Joseph, to supply its neighbours with corn during a period of famine. Nor were the inhabitants backward in assisting the liberality of nature: they busied themselves in embanking, irrigation, and draining, in order to derive all the benefits which the benignant river was capable of affording them. These works are said to have been carried on with particular spirit under the auspices of Sesostris, 1800 years before the Christian æra. So sensible were the Egyptians of the blessings which agriculture afforded, that, in the blindness of their zeal, they ascribed the invention of the art to their god Osiris, and the culture of barley and wheat to their goddess Isis.

The Pelasgi, or aboriginal inhabitants of Greece, were among the number of those who lost all the primeval arts, and fed upon acorns and wild fruits, until they were led by the Egyptians, with whom they had an early communication, to the cultivation of the ground. Like them, too, they placed their benefactress Ceres, to whom they ascribed the introduction of corn, among the number of their deities; a goddess whom authors agree was no other than the Egyptian Isis. In the time of Homer, agriculture was in such esteem that King Laertes laid aside his royal dignity, that he might cultivate a few fields. Hesiod, the contemporary of this author, has devoted a whole poem to the labours of the field in the different seasons of the year. Of other writings, among the Greeks, on agriculture little remains except a treatise by Xenophon on rural affairs, and scattered notices on the subject in the works of Aristotle and Theophrastus; but we learn from Varro, that there were in his time not less than fifty Greek authors to be consulted on agricultural matter.

The Jews, as Scripture informs us, applied themselves when they came into the land of Canaan, to the cultivation of the soil, having each their territory allotted to

them. We may also infer, from the frequent allusions to this subject in different parts of the Old Testament, that husbandry formed their principal occupation. The laws of Moses have, many of them, for their object the regulation of their flocks, their herds, and their fields. David cultivated his own land, having officers to take charge of his flocks, his herds, his camels, his asses, and his warehouses of wine and oil, &c. Elisha was in the field with twelve yoke of oxen when Elijah found him. Besides the frequent mention of husbandry business in different parts of the sacred writings, as the digging of wells, the planting of vineyards, the leasing, gathering in, threshing, sifting, and winnowing of corn, with a number of other things of the like kind.

That the Carthaginians did not neglect agriculture is evident from this, that they had writers on the subject, of whom a famous general, Mago, was one, who is quoted by Varro. He wrote no less than twenty-eight books. It is probable that, under the auspices of these people, agriculture flourished in Sicily, which was afterwards the granary of Rome.

No subject engaged the attention of the Romans more than agriculture, theoretically as well as practically. They divided their time between war and husbandry; their greatest men in the early ages of the republic, being employed alternately in the one and the other. Cincinnatus was taken from the plough to fill the office of dictator; and Regulus besought the senate that he might return to his little farm for a short time, to prevent it from being ruined. Pliny observes, that the Romans ploughed their fields with the same diligence that they pitched their tents, and sowed their corn with as much care as they raised their armies. When riches had introduced luxury, and artificial manners and habits, the labours of the field were performed by their slaves; but there remained many among them of the higher orders who directed their personal attention to the subject. The writings of Cato the Censor, Varro, Pliny, Columella, and Palladius, as well as those of the poet Virgil, abound with practical and useful observations on the whole round of farming business. At the same time they all agree in lamenting that agriculture was not pursued with the same zeal as formerly. The great among the Romans had town houses as well as villas, and living more in the former than in the latter, the management of their farms was left to their bailiffs or servants. The ox, which was the principal beast of burden among the Egyptians, the Jews, and Grecians, was also highly esteemed among the Romans. Many directions for the breeding, breaking, feeding, and working this animal are to be found in the writers abovementioned; as also in regard to the management of bees, which were highly prized. As to the implements of husbandry used among the Romans, the description of them not being illustrated by any representation, it is not easy to speak precisely of them; but it is clear that they used the plough with and without wheels, with and without boards, with and without coulters, also with shares of different constructions. A reaping machine is likewise spoken of both by Pliny and Palladius, which was driven by an ox; but for the most part they cut their corn with the hand, either with the hook close to the ground, or only the ears with a curved stick and a saw attached to it, or otherwise they cut the stalks in the middle, leaving the stubble to be afterwards mowed. They threshed either with a machine composed of rollers, or with rods or flails, or they trod it out with their feet. Haymaking was performed among the Romans much in the same manner as at present. Harrowing the corn was particularly recommended by the Roman writers; who also speak of hoeing, weeding, watering, draining, and following the ground, which was universal among them

Agriculture shared the fate of all the other arts on the decline of the empire: from the time of Pliny to the fifteenth century, there is no work extant on the subject, except the Geoponics, which was published by Constantine Pogonatus, and probably collected by the emperor himself. Crescenzio, a writer of Bologna, was the first who called the attention of his countrymen to this subject after this long interval. His little work, which was collected from the Roman writers, was followed by some other Italian productions: but probably nothing contributed more to give an importance to agricultural pursuits than the introduction of the feudal system, which gave to every man a rank and distinction according to the quantity of land he either possessed or occupied; for not only the great lord, who was the owner of the soil, or reaped the fruits of it, but also his tenants, who cultivated it, were invested with political privileges that were enjoyed by no other members of the community; and although the feudal burdens and restraints have ceased, yet the privileges and advantages attached to the possession of landed property still give it a paramount advantage. Hence it is, that since the revival of the arts, the science of agriculture has been zealously cultivated

by the higher orders. The writers likewise on this subject have within the last century been more numerous than at any former period; and every effort has been made by experiments, inventions, and improvements to render the land productive. Nor have these efforts been without effect, for, notwithstanding the immense increase in the population, there has been no such scarcity as we read of in former times.

AGUE. An intermitting fever, with hot and cold fits alternately.

AGOUTI. A South American animal, resembling a guineapig, having the characters of the rat kind, and the hair and voice of the hog. When provoked, it raises all the hair of its back upright, and strikes the earth with its hinder feet.

AGUAPECACA. The Jacana, a Brazilian bird about the size of a pigeon.

AGRYPNOCOMA. The three-toed sloth; so named from its peculiar cry.

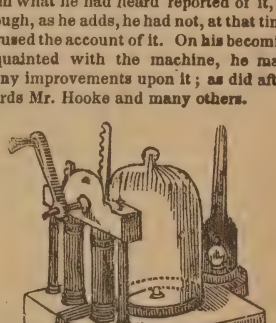
AIA. Brazilian bird of the Spoonbill kind.

AICURUS. A large and beautiful species of parrot, found in Brazil.

AILURUS. The panda, a carnivorous quadruped inhabiting the north of India; it is allied to the raccoon, about the size of a large cat, and has a soft, thick fur, of a brilliant fulvous red, on the upper parts.

AIR. An invisible, transparent fluid, which we constantly breathe, and which is essential to the support of animal and vegetable existence. It envelops the entire globe, and constitutes the atmosphere that surrounds it. Air is 816 times lighter than its bulk of water; 1,000 cubic inches at the ordinary temperature and pressure weighing 305 grains. It consists of about 80 parts, in bulk, of nitrogen, and 20 parts of oxygen, and about one-thousandth part of carbonic acid. Air, when inhaled into the lungs, unites with the carbon of the blood, and forms carbonic acid, a process which produces the heat necessary to sustain the proper temperature of the animal system.—In zoology, Air-cells are membraneous receptacles communicating with the lungs, and in birds extending through the different parts of the body, by which their specific gravity is diminished, and they are rendered fitter for sustenation in the air.—In botany, air-cells are cavities in the leaves and stems of certain algæ, which render them buoyant in water.—Air-plants are orchideous plants which live for many months suspended in the air.—Air-vessels are spiral vessels or ducts in plants containing air, and supposed to answer the same purpose in the vegetable system as lungs do in the animal.

AIR-PUMP. A machine for exhausting the air out of vessels, in the same manner as water is drawn up by a pump. This celebrated machine was invented by Otto de Guericke, consul of Magdeburgh, who exhibited his first public experiments with this instrument before the Emperor and States of Germany, at the breaking up of the Imperial Diet at Ratisbon, in the year 1654; but his description of the machine was first published in 1672, at Amsterdam, under the title of Experimenta nova Magdeburgica de Vacuo Spatio. Before this publication, it appears that Mr. Boyle, who had particularly directed his attention to the study of pneumatics, also conceived a similar idea, which led Mr. Hooke to ascribe the invention to him; but Mr. Boyle himself, in a letter to his nephew, Lord Dungarvon, expresses his acknowledgment for the discovery of this useful machine from what he had heard reported of it, although, as he adds, he had not, at that time, perused the account of it. On his becoming acquainted with the machine, he made many improvements upon it; as did afterwards Mr. Hooke and many others.



AIR-SHAFTS (in Mining). Holes or shafts let down from the open air to discharge the foul vapours.

AIR-VESSELS. Spiral ducts or canals in the leaves and other parts of plants, which are supposed to supply them with air, after the manner of lungs in animals.

ALABASTER. A soft kind of marble which is of a granular texture, and of a white colour, and has a certain degree of transparency It is found in Germany

France, and Italy, and is used by sculptors for statues.

ALBATROSS, or Man of War Bird. A large water fowl, which inhabits most seas between the tropics.

ALBINOS. The white Moors, so called by the Portuguese; they have flaxen hair, blue rolling eyes, and a pale livid whiteness.

ALBUMEN. The white of an egg, and any viscous fluid without taste or smell that is like it, as the serous part of the blood.

ALBURNUM. The soft white substance in trees next to the liber, or inner bark.

ALCHEMY That obsolete branch of chymistry which had for its object the transmutation of metals into gold; the finding the panacea, or universal remedy; and some other things equally ridiculous.

ALCOHOL. Commonly called spirit of wine, but obtained by distillation in a state more ardent and purified than that liquor. It is chiefly employed in preparing varnishes, and dissolving gums, resins, &c. Its antiseptic power makes it useful in preserving anatomical preparations.

ALCOR. A small star, adjoining the bright one in the middle of the tail of Ursa Major

ALCORAN. See Koran

ALDEBARAN, or The Bull's Eye. A star of the first magnitude in the constellation Taurus.

ALDER. A tree which thrives particularly in moist places. The principal sorts of alder are the round leaved, or common alder, the long-leaved, and the dwarf alder.

ALDERMAN. A superior judge, who in England sat with the bishop in the county courts in the time of the Saxons. The alderman is now a magistrate next to the mayor in a city or borough.

A-LEE. A sea term, signifying to the leeside, or side which the wind blows upon.

ALEMBIC. A vessel formerly used for distilling; in the place of which retorts are now mostly in use.

ALEXANDRINE. A verse in modern poetry consisting of ten, twelve, or thirteen syllables.

ALGÆ. A natural order of plants in the Linnean system, containing flags, seaweeds, and other marine plants, whose root, leaf, and stem are one.

ALGEBRA. The science of computing abstract quantities by means of symbols or signs. It is called Specious Arithmetic by Vieta, and Universal Arithmetic by Newton. The first letters of the alphabet, *a*, *b*, *c*, *d*, &c. are made to represent known quantities; and the last letters *x*, *y*, *z*, to represent those that are unknown. The operations with these letters are performed by means of the characters (+) for addition, (−) for subtraction, (×) for multiplication, (÷) for division, (=) for equality

ALGEBRA, History of. The term algebra is of Arabic origin, and is derived by some from algeabar almocabaleh, signifying restitution and comparison, or resolution, which properly expresses the nature of the thing: others have derived it from Geber, a celebrated mathematician. This science is not of very ancient date, although it is not possible to fix the exact period of its commencement. The earliest treatise on this subject now extant is that of Diophantus, a Greek author of Alexandria, who flourished about the year 350, and wrote thirteen books of Arithmeticorum, of which six only are preserved. These books do not contain the elementary parts of algebra, only some difficult problems respecting square and cube numbers, and the properties of numbers in general, to which the writings of the more ancient authors, as Euclid, Archimedes, and Apollonius might naturally be supposed to have given birth. Whether the Arabians took their hints from this and similar works among the Greeks, and drew out the science of algebra for themselves, or whether they more immediately derived it, as they did their notation, from the Hondoos, is a matter of doubt. It is certain, however, that the science was first transmitted by the Arabians or Saracens to Europe, about the year 1100; and that after its introduction the Italians took the lead in its cultivation. Lucas Paciolus, or Lucas de Burgo, was one of the first who wrote on the subject, and has left several treatises, published between the years 1470 and 1509. In his principal work, entitled Summa Arithmeticæ et Geometriæ Proportionumque Proportionalitatum, published first in 1494, he mentions several writers, and particularly Leonardus Pisanus, otherwise called Bonacci, an Italian merchant, who, in the thirteenth century, used to trade to the seaports, and thence introduced the science of algebra into Italy. After Lucas de Burgo, many other Italian writers took up the subject, and treated it more at large, as Scipio Ferreus, who found out a rule for resolving one case of a compound cubic equation; but more especially Hieronymus Cardan, who, in ten books published in 1539-45, has given the whole doctrine of cubic equations; for part of which, however, he was indebted to Nicholas Tartalea, or Tartaglea, of Brescia, a contemporary of Cardan's, who published a book on cubic

equations, entitled Quesite Invenzioni diverse, which appeared in 1596. Cardan often used the literal notation of $a$, $b$, $c$, $d$, &c., but Tartalea made no alteration in the forms of expression used by Lucas de Burgo, calling the first power of the unknown quantity in his language cosa, the second censa, the third cubo, &c. writing the names of all the operations in words at length, without using any contractions, except the initial R, for root, or radicality. About this time the science of algebra also attracted the attention of the Germans, among whom we find the writers Stifelius and Scheubelius. Stifelius, in his Arithmetica Integra, published at Nuremberg in 1544, introduced the characters $+$, $-$, and $\surd$, for plus, minus, and radix, or root, as he called it; also the initials $\mathfrak{Pl}$, $\mathfrak{Z}$, $\mathfrak{Bp}$, for the power 1, 2, 3, &c., and the numeral exponents 0, 1, 2, 3, &c. which he called by the name of exponens exponent. He likewise uses the literal notation, A, B, C, D, &c for the unknown or general quantities. John Scheubelius, who wrote about the same time as Cardan and Stifelius, treats largely on surds, and gives a general rule for extracting the root of any binomial or residual, $a \pm b$, where one or both parts are surds. These writers were succeeded by Robert Recorde, a mathematician and physician of Wales, who in his works, in 1552 and 1557, on Arithmetic, showed that the science of algebra had not been overlooked in England. He first gave rules for the extracting of the roots of compound algebraic quantities, and made use of the terms binomial and residual, and introduced the sign of equality, or $=$. Peletarius, a French algebraist, in his work, which appeared at Paris in 1558, made many improvements on those parts of algebra which had already been treated of. He was followed by Peter Ramus, who published his Arithmetic and Algebra in 1560; Raphael Bombelli, whose Algebra appeared at Bologna in 1579; and Simon Steven, of Bruges, who published his Arithmetic in 1585, and his Algebra a little after. This latter invented a new character for the unknown quantity, namely, a small circle (○), within which he placed the numeral exponent of the power; and also denoted roots as well as powers, by numeral exponents. The algebraical works of Vieta, the next most distinguished algebraist, appeared about the year 1600, and contain many improvements in the methods of working algebraical questions. He uses the vowels A, E, I, O, Y. for the unknown quantities, and the consonants, B, G, D, &c. for the known quantities; and introduced many terms which are in present use, as coefficient, affirmative and negative, pure and affected, &c.: also the line, or vinculum, over compound quantities ($\overline{A+B}$). Albert Girard, an ingenious Flemish mathematician, was the first person who, in his Invention Nouvelle en l'Algebre, &c. printed in 1629, explained the general doctrine of the formation of the coefficients of the powers from the sums of their roots, and their products. He also first understood the use of negative roots, in the solution of geometrical problems, and first spoke of imaginary roots, &c. The celebrated Thomas Harriot, whose work on this subject appeared in 1631, introduced the uniform use of the letters $a$, $b$, $c$, &c.; that is the vowels $a$, $e$, and $i$ for the unknown quantities, and the consonants, $b$, $c$, $d$, &c. for the known quantities; these he joins together like the letters of a word, to represent the multiplication or product of any number of these literal quantities, and prefixing the numeral coefficient, as is usual at present, except being separated by a point, thus 5.bbc For a root he sets the index of the root after the mark $\surd$, as $\surd 3$ for the cube root, and introduces the characters $>$ and $<$ for greater and less; and in the reduction of equations he arranged the operations in separate steps or lines, setting the explanations in the margin, on the left hand, for each line. In this manner he brought algebra nearly to the form which it now bears, and added also much information on the subject of equations. Oughtred, in his Clavis, which was first published in 1631, set down the decimals without their denominator, separating them thus 21(56 In algebraic multiplications he either joins the letters which represent the factors, or connects them with the sign of multiplication $\times$, which is the first introduction of this character. He also seems to have first used points to denote proportion, as 7 . 9 :: 28 . 36; and for continued proportion has the mark $\div\div$. In his work we likewise meet with the first instance of applying algebra to geometry, so as to investigate new geometrical properties: which latter subject is treated at large by Descartes, in his work on Geometry, published in 1637, and also by several other subsequent writers. Wallis, in his Arithmetica Infinitorum, first led the way to infinite series, particularly to the expression of the quadrature of the circle by an infinite series. He also substituted the fractional exponents in the place of radical signs, which in many instances facilitate the operations. Huygens, Barrow, and other mathematicians

employed the algebraical calculus in resolving many problems which had hitherto baffled mathematicians. Sir Isaac Newton, in his Arithmetica Universalis, made many improvements in analytics, which subject, as well as the theory of infinite series, was further developed by Halley, Bernoulli, Taylor, Maclaurin, Nicole, Stirling, De Moivre, Clairaut, Lambert, Waring, Euler, &c.

ALGOL. A fixed star of the second magnitude in the constellation of Perseus, or Medusa's Head.

ALGORITHM. An Arabic word, frequently used to denote the practical rules of algebra.

ALIAS (in Law). A word signifying, literally, otherwise; and employed in describing the defendant, who has assumed other names besides his real one.

ALIBI (in Law). A term signifying, literally, elsewhere; and used by the defendant in a criminal prosecution, when he wishes to prove his innocence, by showing that he was in another place, or elsewhere, when the act was committed.

ALICONDA. An Ethiopian tree, from the bark of which flax is spun.

ALIEN (in Law). One born in a foreign country. An alien is incapable of inheriting lands until he is naturalized by an act of the legislature. He has likewise no right to vote at elections, or to enjoy any office, nor to be returned on any jury, unless where an alien is to be tried.

ALIMONY (in the Civil Law). The allowance made to a married woman upon her separation from her husband.

ALIQUANT PARTS. Such numbers in arithmetic as will not divide or measure a whole number exactly, as 7, which is the aliquant part of 16.

ALIQUOT PARTS. Such part of a number as will divide or measure a whole number exactly, as 2 the aliquot part of 4, of 9, and 4 of 16.

ALKALI or ALCALI. A perfectly pure salt, which combines with acids so as to neutralize or impair their activity, and produces salts. Besides, alkalies change the purple colour of many vegetables to a green, the reds to a purple, and the yellows to a brown. Some alkalies are called fixed, because they remain fixed in the fire, as potash and soda; others are volatile, as ammonia.

ALLAH. The Arabian name of God.

ALLEGIANCE (in Law). The faithful obedience which every subject owes to his prince; the oath of allegiance is that which every person is required to take before he enters on any office.

ALLEGORY. A series or chain of metaphors continued through a whole discourse; thus the prophets represent the Jews under the allegory of a vine, planted, cultivated, and watered by the hand of God.

ALLEGRO. An Italian word used in music, to denote that the part is to be played in a brisk and sprightly manner.

ALLIGATION. A rule in arithmetic, teaching how to compound several ingredients for any design proposed. It is either medial or alternate. Alligation medial is the method of finding the rate or quality of the composition from having the rates or qualities of the several ingredients, as to find the value of brandy per gallon, which is composed of 10 gallons at 24*s.* per gallon, 12 at 30*s.* per gallon, &c. Alligation alternate is the method of finding the quantities of ingredients necessary to form a compound of a given rate, as to find how gold of various degrees of fineness, that is of 19, 21, and 23 carats fine, &c. may be mixed together so that the mixture may be 20 carats fine. Questions of this kind are better solved by algebra.

ALLIGATOR. An amphibious animal, abounding in both North and South America in the torrid zone, and sometimes grows to the length of 18 or 20 feet. The Alligator is found in the lower parts of the Mississippi, but it is more common in the large rivers of South America. It is called Cayman by the Indians. It resembles the Crocodile of Africa and Asia, but it never grows as large, and is beside, different in formation and in its habits.

ALLITERATION. A repeating or playing upon the same letter in a succession of words.

ALLODIAL. An epithet for lands held without any acknowledgment to a lord or superior, in opposition to feudal lands. Allodial lands are exempt from rent or services.

ALLOY, or ALLAY. A proportion of any baser metal mixed with one that is finer, thus the gold coin has an alloy of silver and copper, as silver has of copper

alone: the proportion in the former case for standard gold is 2 carats of alloy in a pound weight, or 22 carats fine; in the latter case, for the silver, there are 18 dwts. of alloy in 11 oz. 2 dwts. fine.

ALL SAINTS. A festival observed by some Christians on the first day of November, in commemoration of all the saints.

ALLSPICE, or the PIMENTO TREE. A beautiful tree of Mexico and the West Indies, the fruit of which is highly aromatic. The tree is about 30 feet in height, and 2 in circumference

ALLUVION. A gradual increase of land washed to the shore by inundations. Alluvial formations are also to be found in valleys and plains, by the deposit of gravel, loam, clay, or other earths washed down from the mountains.

ALMAGEST. The name of a celebrated book on astronomy, composed by Ptolemy.

ALMA MATER. The name given to the universities of Oxford and Cambridge, England, by their several members who have passed their degrees in each of these universities. The same is done by the American Colleges.

ALMANAC. A calendar or table containing a list of the months and days, with an account of the rising and setting of the sun and moon, and other incidental matters. The English Nautical Almanac, or Astronomical Ephemeris, is a kind of national almanac, begun in 1767, under the direction and by the advice of the astronomer royal, the late Rev. Dr. Maskelyne. Besides most things essential to general use, which are found in other almanacs, it contains many new and important matters, particularly the distance of the moon from the sun and fixed stars, computed to the meridian of Greenwich, for every three hours of time, for the purpose of computing the longitude at sea. This almanac is generally computed a few years forward, for the convenience of ships going out upon long voyages. A similar work is published in the United States. The American Almanac, first published at Boston in 1830, embraces a great mass of statistical knowledge, beside that usually given in an almanac.

ALMOND The fruit of the almond tree, which is a nut, and is either sweet or bitter

ALMOND TREE. A tall tree, resembling the peach tree, which flourishes in Asia and the southern parts of Europe. It is one of the first trees that bloom in Spring.

ALMONER. In England an ecclesiastical officer of the king, appointed to distribute the king's alms to the poor every day

ALOE. A tree which originally came from India, is remarkable for a bitter juice, called aloes, which is extracted from its leaves, and is very useful in medicine. The aloe soccotrina is a European species much cultivated in Spain.

ALPHA. The first letter in the Greek alphabet, which with the second letter, beta, forms the word alphabet.

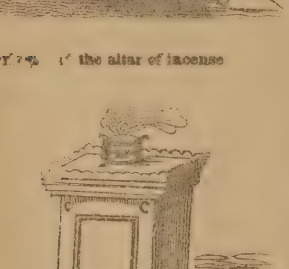
ALPHABET. A series of the several letters in a language, which vary in number in different languages The Hebrew contains 22 letters, as also the Chaldee, Samaritan, Syriac, Persian, Æthiopic, Saracen, &c.; but the Irish, which is the same as the Pelasgian, or Scythian, still retains only 17; the Greek alphabet, which was brought by Cadmus into Greece from Phœnicia, and was also Pelasgian in its original, consisted of 16 or 17, to which were afterwards added 7 or 8 more, to make up 24. The ancient Arabic alphabet consisted of 24, to which 4 more letters have since been added; the Coptic alphabet consists of 32, the Turkish of 33, the Georgian of 36, the Russian of 39, the Spanish of 27, the Italian of 20, the Latin of 22, the French of 23, and the English of 26. See more on this subject under the head of WRITING The Chinese have no proper alphabet, unless we reckon as such their keys to classes of words, distinguished by the number of strokes combined in each, of which they have 214 in number. As to the written characters of these alphabets, see WRITING

ALT. That part of the great scale of sounds lying between F above the treble cliff note, and G in altissimo.

ALTAR. A table or raised place on which any offering was made to the Almighty The first altar mentioned is that built by

Noah after the flood. The two principal altars of the Jews were the altar of burnt

the altar of incense



ALTERNATION A rule in arithmetic showing the different ways in which any number of quantities may be changed or combined.

ALTIMETRY. The art of measuring altitudes or heights.

ALTITUDE. The height of an object, or its elevation above that plane to which the base is referred; thus in mathematics the altitude of a figure is the perpendicular or nearest distance of its vertex from the base. The altitude of an object is the elevation of an object above the plane of the horizon, or a perpendicular let fall to that plane, as a perpendicular let fall from a tower.

Altitudes are either accessible or inaccessible. An accessible altitude of an object is that whose base we can have access to, so as to measure the distance between it and the station from which the measure is to be taken.

Inaccessible altitude is when the base of the object cannot be approached. Inaccessible altitudes may be measured either by geometry, trigonometry, optical reflection or by the barometer. The altitudes of mountains may be determined best by the barometer, for as the weight of the atmosphere diminishes as we rise, the fall of the barometer determines the elevation of any place The altitude of the pyramids in Egypt was measured in the time of Thales, by means of their shadow and a pole set upright beside them, making the altitudes of the pole and pyramid to be proportional to the length of their shadows. The instruments now commonly used in measuring altitudes are the geometrical square the quadrant, and theodolite.

ALTITUDE (in Optics). The height of an object above a line drawn parallel to the horizon from the eye of the observer.

ALTITUDE OF THE EYE (in Perspective). The perpendicular height of the eye above the geometrical plane.

ALTITUDE OF A STAR, &c. (in Astronomy). The height of any star, &c above the horizon, or an arc of a verticle circle, intercepted between the star and the horizon. This altitude is either true or apparent, according as it is reckoned from the rational or sensible horizon, and the difference between these two is termed by astronomers the parallax of altitude.

ALTO (in Music books). Italian for the upper or counter tenor, and is common in music of several parts.

ALUM. A mineral salt, composed of sulphuric acid, potash, alumina, and water. It is of a white colour, and of an astringent acid taste; natural alum, which was well known to the ancients, is a kind of whitish friable stone, formerly found in the island of Melos, Macedonia, Egypt, &c. Factitious alum is commonly made of a stone, of seaweed, and of urine. It is known by the names of rock or English alum, which is colourless; and Roman alum, which is of a reddish colour.

ALUM EARTH. The earth from which alum is extracted.

ALUMINA, or ALUMINE. The earth of alum, an argillaceous, soft, and insipid sort of earth, which is the base of alum, being the principal part of clay.

ALUM WATER. A preparation used by painters in water colour, prepared by dissolving alum in water.

A. M. An abbreviation for Anno Mundi, the year of the world, and Magister Artium, master of arts.

AMALGAM, or AMALGAMA. The mixture of mercury with some other metal Amalgams are used either to render a metal fit to be spread on some works, as in gilding,

or else to reduce the metal to a subtle powder. An amalgam of tin and mercury is used for looking glasses.

AMALGAMATION. The operation of mixing quicksilver with some other metal, by fusing the metal, and in that state adding a portion of mercury to it. Gold of all metals unites best with mercury, next to that silver, then lead, tin, and every other metal, except iron and copper, the last of which admits scarcely any of such amalgamation.

AMANUENSIS. A slave among the Romans, who used to be employed in writing for his master; also any one among the moderns who is employed to transcribe for another.

AMARANTH. A plant which flourishes in the Indies and South America, remarkable for the lasting beauty of its flowers

AMATEUR. One who follows a particular art or profession not for gain but for pleasure.

AMBASSADOR. One appointed by a sovereign power to represent him, and superintend his affairs at a foreign court.

AMBER. A hard, brittle, tasteless substance, mostly semitransparent, or opaque, and of a glossy surface. It is highly electric, and if a piece be kindled it burns to the end with pungent white vapours, without melting.

AMBERGRIS. A solid sebaceous or fat substance, found floating in the sea, near the coasts of various tropical countries. It is supposed to be the excrement of the spermatic whale, having frequently been met with in the intestines of that fish.

AMBER TREE. A shrub, the beauty of which lies in its small evergreen leaves; these grow as close as heath, and when rubbed emit a fragrant odour

AMBIDEXTER. A person who can use both hands with equal facility.

AMBUSCADE. A place where soldiers lie concealed, in order to surprise an enemy.

AMENDE. A pecuniary punishment imposed, according to the customs of France, by a judge, for any false prosecution or groundless appeal.

AMENDE HONORABLE. An infamous kind of punishment formerly inflicted in France on traitors, parricides, or sacrilegious persons, who were to go naked to the shirt, with a torch in their hand, and a rope about their neck, into a church or a court, to beg pardon of God, the court, and the injured party.

AMENTACEÆ. A natural order of plants, bearing catkins, as the poplar, hazel, beech, &c.

AMERCEMENT. A pecuniary punishment imposed on offenders at the mercy of the court; it is contracted from the Latin words a misericordia, which signify literally *from* or *at the mercy*. Amercements differ from fines, in as much as the latter are defined, and the former are proportioned to the fault, or more properly at the discretion of the court.

AMERICAN ELK. A noble animal of the deer kind.

AMETHYST. A gem of great hardness and brilliancy, and of various colours, but mostly purple or violet. It comes from India, and is used in medicine as an astringent.

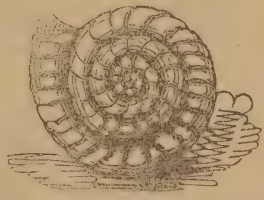
AMIANTHUS. An incombustible mineral flax, which may be drawn into threads and wove into cloth. It is mostly found among rocks.

AMMON. The title under which Jupiter was worshipped in Libya, where a temple was erected to him, from which oracles were delivered for many ages

AMMONIA. A volatile alkali, which, when in its purest state, exists only in the form of a gas. It forms a liquid when cooled, and is known by the name of hartshorn, because it is obtained from distilling the horn of the hart. It may also be obtained from urine and camel's dung by distillation.

AMMONIAC, or GUM AMMONIAC. A resinous substance brought from the East Indies in drops or granules. The best kind is of a yellowish colour without and white within

AMMONITÆ SNAKE STONE. A sort of fossil shells, made up of small circles, like those of a snake rolled up.



AMMUNITION. A general term for all warlike stores, but more especially powder, balls, guns, &c.

AMORPHOZOA. The lowest class of the animal kingdom, as sponges that have no regular symmetrical structure.

AMPETITE. Alum slate, earth used by the Ancients to kill insects on vines.

AMPHIBIA. A class of animals which live equally well in air or water, such as the phocæ, or seal tribe, frogs, lizards crocodiles, eels, water serpents, snakes They are remarkable for their tenacity of

life some will continue to move even when the head is cut off.

AMPHISCII. A name applied by geographers to the inhabitants of the torrid zone.

AMPHITHEATRE. A circular building among the ancients, having seats entirely around, and an area in the middle, where spectacles were exhibited. Some of these, as the Coliseum in Rome, could contain from 50,000 to 80,000 persons.

AMPLIFICATION (with Rhetoricians). An amplifying or enlarging upon an argument, either by aggravating or extenuating a crime, heightening an eulogium, or enlarging a narration, by an enumeration of circumstances, so as to excite proper emotions in the audience.

AMPLITUDE. An arch of the horizon, intercepted between the east or west points and the centre of the sun or stars at their rising and setting. It is called ortive, or eastern amplitude, when the star is rising; and occiduous, or western, when the star is setting.

AMPLITUDE MAGNETICAL. Is an arc of the horizon, contained between the sun or a star at its rising and setting, and the magnetical east or west point of the horizon, indicated by the magnetical compass, or the amplitude or azimuth.

AMPUTATION (in Surgery). The cutting off a limb or other part of the body with an instrument.

AMULET. A supposed charm or preservative against witchcraft, mischief, or diseases. Amulets consist of stone, metal, simples, or whatever else the fancy suggested; sometimes words or sentences might be employed in this manner.

AMZEL. A bird of the blackbird kind, belonging to the same genus, merula, in the Linnæan system. The ring-amzel is remarkable for having a fine broad white ring at the lower part of its throat.

ANA. A name given to amusing miscellanies, consisting of anecdotes, traits of character, and incidents relating to any person or subject.

ANABASIS. The title of Xenophon's description of the younger Cyrus's expedition against his brother, in which the writer bore a principal part.

ANACHRONISM. An error in chronology, as when an event is related o have happened in the reign of a certain prince, which happened either before or after.

ANACLASTICS. Another name for dioptrics, or that branch of optics which relates to refracted light.

ANACREONTIC VERSE. A sort of verse so called from the Greek poet Anacreon, by whom it was first used. It consists of three feet, generally spondees and iambic. It is adapted to soft and tender subjects.

ANAGRAM. The transposition of the letters of one word so as to form another, as amor changed into Roma.

ANALEMMA. A projection of the sphere on the plane of the meridian, orthographically made by straight lines and ellipses, the eye being supposed at an infinite distance, in an equinoctial point.

ANALEMMA. Is also an instrument, a kind of astrolabe, made either of brass or wood, with an horizon fitted to it; it is used for finding the time of the sun's rising or setting, the length of the longest day, &c. The most ancient treatise on this instrument was written by Ptolemy, and published in 1562, with a Commentary by Commandine. Other authors, as Aquilonius, Jacquet, Deschales, &c. have since written on the same instrument.

ANALOGY. The relation which things bear, or are supposed to bear, to each other, from their resemblance or proportion to one another; as the analogy between animals and plants, from which a similar treatment of them in many cases may be inferred. Analogy is one of the principal grounds of reasoning in matters of experience.

ANALYSIS (in Logic). The resolution or unfolding of any thing, so as to discover its component parts as opposed to synthesis Analysis is the method of finding out truth, and synthesis is the method of explaining that truth to others. Among mathematicians it is the art of discovering the truth or falsehood of a proposition, by supposing the question to be solved, and then examining the consequences, till some truth is discovered, or the absurdity and impossibility of the proposition is discovered. The analysis of finite quantities is properly called specious arithmetic, or algebra; the analysis of infinite quantities is the method of fluxions or differential calculus.

ANALYSIS (in Chemistry). Is the decomposition of bodies, as vegetables and minerals, to discover their component parts

ANALYTICS. A name given to algebra being nothing else but a general analysis of pure mathematics; or else because it teaches how to solve questions, and demonstrate theorems, by searching into the fundamental nature and frame of the thing, which is, as it were, resolved into parts, or taken to pieces, and then put together again.

ANAMORPHOSIS (in Perspective and Painting). A monstrous projection, or representation of an image on a plane or curve surface, which beheld at a certain

distance shall appear regular and in proportion.

**ANAPÆST.** A metrical foot, having the two first short and the last long (˘ ˘ ¯), as ĭĕtās.

**ANARCHY.** A society without a government, or where there is no supreme governor.

**ANATHEMA.** In the general sense, a religious curse; in the particular sense, ecclesiastical excommunication.

**ANATOMY.** The act of dissecting bodies for the purpose of examining their structure, and the nature, uses, and functions of their several parts; also the knowledge of the human body derived from such dissections and examinations; when applied to animals it is termed Comparative Anatomy. In the science of anatomy, the body is divided into the head, trunk, and extremities, and is composed of solids and fluids. The solids are the integuments, bones, cartilages, ligaments, membranes, vessels, muscles, nerves, and glands. The principal fluids are the blood, the chyle, the lymph, and the bile. Anatomy, from the names of the parts treated of, is divided into osteogeny, or the doctrine of the growth of the bones; osteology, the doctrine of the bones in the adult subject; chondrology, the doctrine of the cartilages; syndesmology, the doctrine of the ligaments; myology, the doctrine of the muscles; bursalogy, the doctrine of the bursæ mucosæ; splanchnology, the doctrine of the viscera; angeiology, the doctrine of the vessels; adenology, the doctrine of the glands; neurology, the doctrine of the nerves, &c. Anatomy, taken absolutely, applies only to the dissection of human subjects; the dissection and examination of brutes is called Comparative Anatomy.

**ANATOMY, History of.** The science of anatomy was doubtless coeval with that of medicine, for the connexion between the two studies would naturally suggest to the inquirer into the diseases of the human body the necessity of becoming acquainted with its component parts. In Egypt, the practice of embalming rendering it necessary to open the body, led them first to make observations on the structure of the human frame, which was afterwards encouraged by their kings, who ordered dead bodies to be regularly dissected for the perfection of the art; but, judging from some specimens which have been preserved of their anatomical observations, the science did not make any considerable progress among them. There is, however, no doubt, but they laid the foundation, and the Greeks, who derived their earliest information from them, enlarged the boundaries of the science by their researches. Hippocrates, who lived about 400 years before Christ, is the first who expressly wrote on this subject; and the first anatomical dissection recorded was made by his friend Democritus, of Abdera. In Aristotle's works there are many minute particulars on this subject, which show that he had made the animal body his particular study. From the Greeks this science, after an interval of several centuries, passed again into Egypt, where, by the fostering care of the Ptolemies, it was revived and made great advances. Erastratus, the pupil and friend of Theophrastus and Herophilus, laid the foundation of the famous school of anatomy at Alexandria, which was for many centuries in such high repute that no one was supposed qualified for the medical art, who had not studied at Alexandria. Herophilus is said to have dissected not less than 700 bodies, and among the rest some living subjects, but probably, as such a monstrous piece of cruelty must have defeated its own purpose, this latter part of the story is only an exaggeration. The Romans learned from the Greeks the science of anatomy, as they

did most other arts and sciences; for the first rudiments were taught to them by Archagathus, a Greek physician, who first established himself at Rome, and afterwards by Asclepiades, who flourished in the time of Pompey, and gained such repute that he was looked upon as a second Hippocrates. He was succeeded by Cassius, who was supposed to be the disciple of Asclepiades, Celsus, Rufus, Pliny, Cœlius Aurelianus, and Aratæus, whose works abound with anatomical observations, and prove that, although their researches were not deep, their attention was drawn towards the subject. This is also still more evident from the works of Galen, who, in point of accuracy and minuteness of detail, surpassed all that went before him, and also all that followed him until within the last three centuries. The Arabians and Saracens, on the decline of the empire, took the place of the Greeks and Romans in the cultivation of the sciences, but as by the tenets of their religion they were prohibited from touching dead bodies, and consequently could not practice dissection, they were obliged to content themselves with commenting upon Galen. To effect this object, we find that Abdollatiph, a teacher of anatomy in the thirteenth century, examined and demonstrated the structure of the bones by going to the burying grounds; and by that means he detected some errors in Galen. Although the Europeans were not under the same restrictions, yet during the middle ages it is certain that the science of anatomy made no advances. The best treatise then extant, which gained the author great repute, and was the standard book in the schools, was that of Mundinus, which appeared in 1315, yet this was nothing but an abstract of Galen. On the expulsion of the Moors, the prejudice against dissection abated, and copies of the Greek authors having found their way into Europe after the sacking of Constantinople, the study of anatomy revived considerably in the fifteenth century. Among the Italians, Achillinus Benedictus, Berengarius, and Massa added to the stock of anatomical knowledge by discoveries of their own from dissections. But the most distinguished names among the anatomists of that period are those who flourished in the following century, namely, Vesalius, a native of Brussels, Sylvius in France, Columbus, Fallopius, and Eustachius in Italy, who, contrary to the practice of Galen, drew their observations from the human body, rather than from that of the brutes. Vesalius gave the names to the muscles, most of which are retained to this day. Gabriel Fallopius, in his treatise entitled Observationes Anatomicæ, published in 1561, improved upon the descriptions of Vesalius. The Opuscula Anatomica of Bartholomæus Eustachius, published in 1563, have ever been admired for the correctness and exactness of their descriptions. His plates which were intended for a large and complete work on the subject, were not published until 150 years after, when, being found in an old cabinet, they were edited by Lancisi, the pope's physician, who added a short explanatory text, because that of Eustachius could not be found. The next in the list of distinguished anatomists must be reckoned Harvey, who, after having studied in Italy under Fabricius ab Aquapendente, was led by the writings of his master to consider the manner in which the blood was circulated over the whole body, and the offices of the several vessels. Fabricius published an account of the valves which he discovered in the veins. This discovery affected the established doctrine of all ages, that the veins carried the blood from the liver to all parts of the body for nourishment; and Harvey was led by this to consider more narrowly the functions of the heart and the vascular system. The result of his investigation was, that the heart is the grand reservoir of the blood, that the arteries, which had hitherto been considered as air vessels, were the channels by which it was conveyed to all parts of the body, and the veins were the channels by which it was carried back to the heart. His doctrine at first met with considerable opposition, but farther researches put it at length beyond all question, and led to other discoveries of considerable importance. The lacteals, or vessels which carry the chyle to the intestines, were discovered by Asselius, an Italian; the thoracic duct by Pecquet, in 1651; the lymphatics by Thomas Bartholine, a Danish anatomist; besides numerous other discoveries which were made by the help of magnifying glasses. These were first brought into use by Malpighi, after by Laurentius Bellinus, a distinguished anatomist of Italy, Swammerdam, Van Horn, De Graaf, and other Dutch anatomists, particularly Antonius Liewenhoeck, of Delft, who improved on Malpighi's use of microscopes, and succeeded in discovering globules in the blood, animalculæ in the semen, and many other particulars which had hitherto escaped notice. From this time the science of anatomy made prodigious advances towards accuracy, so that each particular part has furnished matter for the labours of celebrated anatomists. The figures of the bones have been given in four large folio volumes, by

Albinus, Cheselden, Trewe, &c.; those of the muscles are given in two large folios, by Cowper and Albinus, the latter of which are particularly admired for their correctness. Haller has published a folio on the blood vessels, Dr. Munro, junior, on the nerves, Albinus, Roederer, and Hunter on the gravid uterus, Weibrecht and others on the joints and fresh bones, Soemmering on the brain, Zinn on the eye, Cotunnius Mickel, junior, and others on the ear, Walter on the nerves of the thorax and abdomen, Munro on the bursæ mucosæ, besides the several systems of anatomy from the pens of Albinus, Keil, Cheselden, Hunter, Munro, Douglas, Fife, Winslow, Bischoff, Gray, Bowman, Virchow, &c.

ANCESTRY. The line of ancestors or forefathers from which any person is descended.

ANCHOR. An instrument for holding a ship in the place where she should ride.

ANCHORAGE. The ground that is fit for holding the anchor; also the duty taken of ships for the use of the haven where they cast anchor.

ANCHORET. A hermit, or one who retired from the world, and lived in perfect solitude.

ANCHOVY. A small seafish much used in sauce; it is so like the common sprat, that the latter is often pickled and sold under its name.

ANDANTE (in Music). Italian for exact and just time in playing, so as to keep the notes distinct from each other.

ANDROIDES (in Mechanics). A term used to denote an automaton in the figure of a man, which, by means of certain springs and other mechanical contrivances, is enabled to walk, and perform other actions of a man. The most celebrated of these automatons which have been exhibited in modern times are the flute-player of M. Vaucanson, exhibited at Paris, the chess-player of M. de Kemplin of Presburg, and the chess-player who lately performed wonders in that game in London. The construction of these automatons is at present a secret.

ANDROMEDA. A small northern constellation consisting of sixty-three stars.

ANEMOMETER. An instrument used for measuring the force and velocity of the wind.

ANEMONE. A beautiful flower originally brought from the east, but now much cultivated in our gardens. The word signifies properly wind-flower, because it was supposed that it opened only when the wind blew.

ANEMOSCOPE. A machine showing from what point of the compass the wind blows.

ANDESITE. A mineral found in the Andes containing the fel-spar called Andesine.

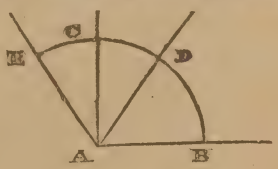
ANEMOMETER. An instrument for determining the course, the force and velocity of winds.

ANGELINA. A planet first observed by Tempel, in 1861.

ANGLES. A German tribe on the Elbe, of the race of the Suevi, who afterwards passed over with the Saxons into Britain, and gave their name to that country.

ANGIOSPERMIA. A term in the Linnæan system for such plants of the class Didynamia as have their seeds enclosed in a capsule or seed-vessel.

ANGLE. The inclination of two lines meeting one another in a point, which lines are called the legs; when the lines meet perpendicularly it is a right angle, as A, B, C; when they meet so as to make




the angle less than a right angle, it is called acute, as A, B, D; and when they make the angle greater, it is called an obtuse angle, as A, B, E.

ANGLER. A singular fish, also known at present by the name of the fishing frog, from the resemblance which it bears to that animal in the state of a tadpole.

ANGLICAN CHURCH. That form of doctrine and discipline which is established in England, and serves for the government

of the whole Christian church in that country. Its doctrines are comprehended within thirty-nine articles, and its government, which is episcopal, consists of two archbishops and twenty-four bishops, together with the different orders of inferior clergy. The same Church is established in America, but is independent of that of England. The members of this church are called Episcopalians.

ANGLICISM. An idiom or manner of speech peculiar to the English, and their descendants.

ANGLING. The art of fishing with a rod, to which are attached a line, hook, and bait. Anglers look for breams in the deepest water, for eels under banks, for chub in deep shaded holes, for perch and roach in ponds, and for trout in quick streams. The best months for angling are from April to October; the time of the day early in the morning, or in the evening of hot days. Fish bite freely in cloudy warm weather, but not at all when it is cold and stormy. Fish ought to be fed on corn boiled soft, garbage, worms chopped to pieces, or grains steeped in blood. If you fish in a stream, it is best to cast in the grains above the hook.

ANIMAL. A living body endued with sensation and spontaneous motion; in its limited sense, any irrational creature, as distinguished from man.

ANIMALCULÆ. Animals so minute as not to be the immediate object of our senses. They are seen only by the help of the microscope.

ANIMAL KINGDOM. One of the three principal divisions into which all organized bodies are divided by Linnæus. It comprehends six classes of animals; namely, Mammalia, or such as suckle their young, mostly quadrupeds; Aves, birds, which are oviparous; Amphibia, amphibious animals; Pisces, fishes, such as live only in water, and are covered with scales; Insecta, insects, which have few or no organs of sense, and a bony coat of mail; Vermes, worms, which have mostly no feet.

ANIME, or GUM ANIME. A resinous substance imported from New Spain and the Brazils.

ANNALS. A species of history, in which events are related in the exact order of chronology

ANNEALING. The process of heating steel and other metal bodies, and then suffering them to cool again gradually

ANNOTTO. A kind of red dye brought from the West Indies. It is procured from the pulp of the seed capsules

ANNUAL. An epithet for whatever happens every year, or lasts a year. An annual, in Botany, is a plant which dies within the year.

ANNUITY. The periodical payment of money, either yearly, half yearly, or quarterly; for a determinate period, as ten, fifty, or a hundred years; or for an indeterminate period, dependant on a certain contingency, as the death of a person; or for an indefinite term, in which latter case they are called perpetual annuities

ANNULET A small square member in the Doric capital.

ANNUNCIATION. The delivery of a message, particularly the angel's message to the Virgin Mary, concerning the birth of our Saviour. The festival in commemoration of that event is called Lady Day

ANODYNES. Medicines so called because they ease pain and procure sleep, such as the medicinal preparations of the poppy.

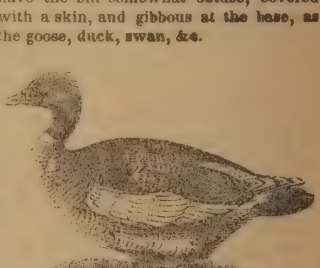
ANOMALISTICAL YEAR (in Astronomy). The time that the earth takes to pass through her orbit

ANOMALOUS VERBS (in Grammar). Verbs which are not conjugated regularly

ANOMALY. In a general sense, irregularity; in Astronomy, the irregularity in the motion of a planet.

ANSER. A star of the fifth magnitude in the milky way.

ANSERES The third order of birds in the Linnæan system, including such as have the bill somewhat obtuse, covered with a skin, and gibbous at the base, as the goose, duck, swan, &c.



ANT. A gregarious and proverbially industrious tribe of insects, which are divided into males, females, and neutrals Their houses are curiously constructed, and divided into chambers, magazines, &c.

ANTARCTIC (in Astronomy). The name of a circle of the sphere, which is opposite to the arctic or northern pole. It is nearly 23 and a half degrees distant from

the south pole, which is also called the antarctic pole.

ANT-EATER. An animal of South America, that has a large slender tongue, which it allows to get covered with ants, and then quickly draws it in.

ANTECEDENT. The word in grammar to which the relative refers; as God, whom we adore, the word God is the antecedent

ANTEDATE. A date that precedes the real one; as the antedate of a bill, that which is earlier than the time when it is drawn.

ANTEDILUVIANS. Persons living before the deluge.

ANTELOPE. A beautiful quadruped, of which there are many varieties. Antelopes are singularly swift in their motion, and in general natives of hot climates, particularly in Africa and Asia. Europe has but two species, and America but one; it is called the Prong-horned Antelope.

ANTENNÆ. The horns or feelers of insects which project from their heads, and serve them in the sense of feeling and seeing.

ANTHEM A sacred composition used as a part of Christian worship.

ANTHER A part of the stamen of a flower which is at the top of the filament. It contains the pollen or farina, which it emits or explodes when ripe.

ANTHOLOGY. A collection of choice poems, particularly a collection of Greek epigrams so called.

ANTHROPOPHAGI. Another name for cannibals, or men eaters.

ANTIDOTE. A counterpoison, or any medicine generally that counteracts the effects of what has been swallowed.

ANTIMONY. A metallic, solid, heavy, brittle substance, which is very seldom found pure, but mostly mixed with other metals. In its pure state it is called the regulus of antimony. Crude antimony, in commerce, is a metallic ore, consisting of the metal called antimony combined with sulphur.

ANTINOMIANS. An ancient sect, who maintained that faith, without good works, was sufficient for salvation. This sect has been revived since the Reformation

ANTIPODES. Persons so named in geography, who live diametrically opposite to one another, as it were feet to feet. They have equal latitudes, the one north and the other south; but opposite longitudes, consequently when it is day to the one it is night to the other, and when summer to the one winter to the other

ANTIQUARY. One who searches after the remains of antiquity. The monks who were employed in making new copies of old books were formerly called antiquarii.

ANTISCII (in Geography). People who live on different sides of the equator, and have their shadows at noon fall directly opposite ways.

ANTISEPTICS. Substances which resist putrefaction.

ANTITHESIS. A figure of speech, in which contraries are put in contrast with each other, as, He gained by losing, and by falling rose.

ANTOECI (in Geography). People who live under the same meridian, east or west, but under opposite parallels of latitude they have their noon or midnight at the same hour, but their seasons contrary.

ANTONOMASIA. A form of speech, in which the name of some dignity, office, profession, science, or trade, is used instead of the true name of a person; or, in which a proper name is put in place of an appellative: thus, we say the President, the Englishman, the Printer, a Cato, a Solomon.

ANTOSIANDRIAN. One of a sect of rigid Lutherans, so denominated from their opposing the doctrines of Osiander, the German reformer.

ANTRUSTION. In history, the Antrustions were a class of people among the Franks, who were the personal vassals of the kings and counts.

ANUBIS. An Egyptian deity, represented by a human figure, with the head of a dog or a fox. He was the son of Osiris, and was regarded as the conductor and guardian of departed souls.

AONIAN. Pertaining to the Muses, or to Aonia, their residence, in Bœotia.

AORIST. The name of certain tenses in the Greek language, which express time indeterminate, that is, either past, present, or future.

AOUTA. A tree of Otaheite, from the bark of which the natives make cloth.

AORTA. In anatomy, the great artery, or main trunk of the arterial system, proceeding immediately from the left ventricle of the heart. It is distinguished into

the descending or ascending, according to the manner in which it runs.

APATITE. Phosphate of lime; a mineral which occurs in tin veins, and is found in Cornwall and Germany.

APE. The name of a tribe of animals of the monkey kind which are without tails, imitative, chattering, full of gesticulations, thievish, and mischievous.

APERIENTS. Opening medicines

APETALOUS (in Botany). A term for plants whose flowers have no flower leaves or corolla; as the hippuris, or fox tail grass.

APEX. A little woollen tuft on the cap of the flamen, or high priest, among the ancients.

APEX (in Mathematics). The angular point of a cone or conic section.

A. P. G. An abbreviation for Professor of Astronomy in Gresham College, England.

APHÆRESIS (in Grammar) The taking away a letter or syllable from a word.

APHELION. That point at which the earth, or any planet, is at the greatest distance from the sun.

APHIS. The plant louse; an extensive genus of the hemiptera order.

APHORISM. A brief sentence in science, comprehending some experimental truth, as the Aphorisms of Hippocrates, &c.

APIARY. A place where bees are kept, which should be selected with great care, observing that it face the south, be defended from high winds, and not within the sphere of offensive smells, or liable to the attacks of hornets or any other hostile vermin

APIS The bee; a genus of insects of the order hymenoptera.

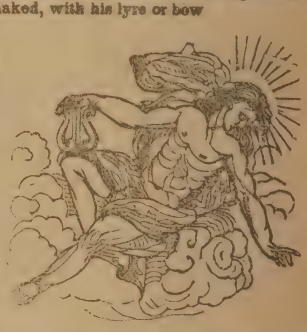
APIS. An Egyptian deity, worshiped under the form of an ox.

APOCOPE (in Grammar). The cutting off the last letter or syllable of a word.

APODAL. The first order of fishes in the Linnæan system, having no ventral fins, as the eel, the wolf fish, the sword fish, the lance, &c.

APOGEE. That point of the orbit at which the sun, moon, or any planet is most distant from the earth. This term, as well as the perigee, was most in use among the ancients; modern astronomers making the sun the centre of the universe mostly use the terms aphelion and perihelion.

APOLLO. The god of medicine, music poetry, and the fine arts. He was the son of Jupiter and Latona, born in the island of Delos, and is commonly represented naked, with his lyre or bow



APOLOGUE. An instructive fable, or a feigned relation, intended to teach some moral truth; as the Fables of Esop.

APOPHTHEGM. A brief and pithy saying, particularly of some distinguished person.

APOPLEXY. A disorder which suddenly surprises the brain, and takes away all sense and motion.

APOSTATE. One who has forsaken his religion; particularly one who has deserted the Christian profession.

A POSTERIORI. A term employed in

demonstrating a truth; as when a cause is proved from an effect.

APOSTLES Properly messengers or ambassadors, a term applied now particularly to the twelve disciples commissioned by our Saviour to preach the gospel to all nations.

APOSTROPHE. A figure of speech, by which the orator turns from his subject to address a person either absent or dead, as if he were present.

APOSTROPHE (in Grammar). A mark of contraction in a word; thus, lov'd for loved.

APOTHECARY. Properly the keeper of a medicine shop; but more generally one who practises the art of pharmacy, or of compounding medicines. In London, apothecaries are one of the city companies, and are exempted, by stat. 9 Geo. I. from serving upon juries or in parish offices. They are obliged to make up their medicines according to the formulas prescribed in the college dispensatory, and are liable to have their shops visited by the censors of the college, who are empowered to destroy such medicines as they do not think good.

APOTHEOSIS. Deification, or the ceremony of placing among the gods, which was frequent among the ancients. This honour was conferred on several of the Roman emperors at their decease.

APPANNAGE, or APPENNAGE. Lands set apart as a portion for the king's younger children in France.

APPARATUS. A set of instruments or utensils necessary for practising any art, as a surgeon's apparatus, a chemist's apparatus.

APPARENT (among Mathematicians). A term applied to things as they appear to us, in distinction from what they are in reality; as the apparent distance, magnitude, place, figure, &c. of any heavenly body, as distinguished from the real or true distance, &c.

APPARITION (in Astronomy). The becoming visible. The circle of apparition is an imaginary line, within which the stars are always visible in any given latitude.

APPEAL (in Law) The removal of a cause from an inferior to a superior court.

APPEARANCE (in Law). The defendants appearing before the court to plead in any prosecution; there are four ways for defendants to appear to actions; in person, or by attorney, for persons of full age; by guardians, or next friends, for infants.

APPEARANCE (in Perspective). The projection of a figure or body on the perspective plane; in Astronomy, the same as phenomenon, or phasis.

APPELLANT, or APPELLOR. One who makes or brings an appeal; it was formerly much used for one who brought an appeal in a criminal prosecution.

APPELLATIVE (in Grammar). A noun or name applicable to a whole species or kind, as, a man, a horse.

APPENDANT (in Law). Any thing inheritable that belongs to a more worthy inheritance, as an advowson, or common, which may be appendant to a manor; or land to an office: but land cannot be appendant to land, both being corporeal, and one thing corporeal may not be appendant to another.

APPLE. A well known fruit, from which cider is made.

APPLICATION. The bringing one thing nearer to another for the purpose of measuring it; thus a longer space is measured by the application of a less, as a yard by a foot or an inch.

APPOSITION (in Grammar). The placing two or more substantives together, without any copulative between them, as Cicero the orator.

APPRAISING. The valuing or setting a price on goods An appraiser is one sworn to value goods fairly.

APPREHENSION. The first power of the mind, by which it simply contemplates things, without pronouncing any thing upon them.

APPRENTICE. A young person bound by indentures or articles of agreement to a tradesman, or artificer, to learn his trade or mystery. By the stat. 5 Eliz. no person can exercise any trade in any part of England, without having served a regular apprenticeship of at least seven years. No trades, however, are held to be within the statute but such as were in being at the making of the same in the reign of Elizabeth. No such law exists in the United States

APPROACHES (in Fortification). The works thrown up by the besiegers, in order to get nearer a fortress without being exposed to the enemy's cannon.

APPROPRIATION. The annexing a benefice to the proper and perpetual use of a religious house, bishopric, college, &c. so that the body or house are both patron and person, and some one of the number was appointed to officiate. At the dissolution of the monasteries, the appropriations, being more than one third of all the parishes in England, were given to laymen, whence sprung most of the lay impropriations existing at present; for what is called an ap-

propriation in the hands of religious persons, is usually called an impropriation in the hands of laity. It is computed that there are in England three thousand eight hundred and forty-five impropriations.

APPROVER (in Law). One who, being indicted of treason or felony, confesses himself guilty, and accuses others to save himself: this is vulgarly called turning king's evidence.

APPROXIMATION. In general a getting near to an object; in mathematics, a continual approach to a root or quantity sought, but not expected to be found.

APPULSE (in Astronomy). The approach of a planet towards a conjunction with the sun or any of the fixed stars.

APPURTENANCES (in Law). Things corporeal and incorporeal that appertain to another thing as principal; as hamlets to a chief manor. Outhouses, yards, orchards, gardens, &c. are appurtenant to a messuage.

APRICOT. A fine sort of wall fruit, which requires much sun to ripen it.

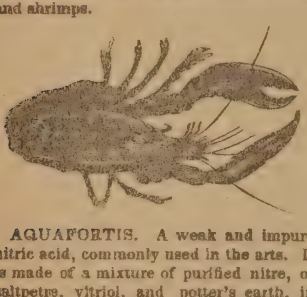
APRIL. The second month of Romulus' year, and the fourth of Numa's year, which began as it does now, in January.

A PRIORI. A mode of reasoning by proving the effect from the cause.

APROPOS. Just in time.

APSIDES. The two points in the orbit of a planet, at the greatest and least distance from the sun.

APTERA. The seventh order of insects, having no wings, including spiders, fleas, earwigs, &c.; also lobsters, crabs, prawns, and shrimps.



AQUAFORTIS. A weak and impure nitric acid, commonly used in the arts. It is made of a mixture of purified nitre, or saltpetre, vitriol, and potter's earth, in equal parts, and is distinguished into single and double, the former of which is only half the strength of the latter.

AQUA REGIA. Nitro-muriatic acid; composed of a mixture of the nitric and muriatic acids, which dissolves gold.

AQUARIUS. The water-bearer, a constellation, and the eleventh sign in the zodiac, commonly marked thus (♒).

AQUATICS. Trees or plants which grow on the banks of rivers and marshes and watery places.

AQUA-TINTE. A method of etching, which is made to resemble a fine drawing in water colours

AQUEDUCT. A conduit for water by pipes. In the time of the emperor Nerva there were nine, which emptied themselves through 13,594 pipes of an inch diameter. That constructed by Louis XIV. for carrying the Bucq to Versailles, is 7000 fathoms long, with 2560 fathoms of elevation, and contains 242 arcades.

AQUEOUS HUMOUR. The watery humour of the eye, the first and outermost, which is less dense than the crystalline.

ARABIC, or GUM ARABIC. A transparent kind of gum brought from Arabia which distils from a plant of the acacia species. It is used for painting in water colours, and also by calico printers and other manufacturers, but it is difficult to procure it genuine. That which is in small pieces, and of a perfectly white colour, is reckoned the best

ARABIC FIGURES, or CHARACTERS. The numeral characters now used in our arithmetic, which were introduced into England about the eleventh century

ARBITER (in Civil Law). A judge appointed by the magistrate, or chosen by the parties to decide any point of difference. An arbiter must judge according to the usages of law; but an arbitrator, who is a private extraordinary judge, chosen by the mutual consent of parties, is allowed a certain discretionary power.

ARBITRATION. A mode of deciding controversies by means of arbiters or arbitrators. (See ARBITER).

ARBOR VITÆ. An evergreen shrub

ARBUTUS. The strawberry-tree. A beautiful shrub, bearing a red roundish berry.

ARC. Any part of a curve line, as of a circle, ellipse, &c.

ARC, or ARCH DIURNAL (in Astronomy). That part of a circle described by a heavenly body, between its rising and setting. The nocturnal arch is that which is described between its setting and rising.

ARCH (in Architecture). That part of a building which derives its name from its curved form. Some arches are semicircular, which are called Saxon arches; others pointed, which are called Gothic

ARCH OF EQUILIBRIUM (in Bridge building). That which is in equilibrium in all its parts, and therefore equally strong throughout, having no tendency to break in one part more than another

**ARCHBISHOP.** The chief prelate, having authority over other bishops. There are two archbishops in England; namely, that of Canterbury, who has twenty-one bishops under him; and that of York, who has four.

**ARCHDEACON.** An officer in the church of England, who acts for the bishop, having a superintendant power over the clergy within his district.

**ARCHDUKE.** One having a preeminence over other dukes.

**ARCHERY.** The art of shooting with a bow; formerly a favourite diversion among the English, who were also much skilled in it as a military exercise. The practice of archery was much encouraged by the kings. It was followed both as a recreation and a service, and Edward III. prohibited all useless games that interfered with the practice of it on holydays and other intervals of leisure. By an act of Edward IV. every man was to have a bow of his own height, to be made of yew, hazel, or ash, &c.; and mounds of earth were to be made in every township, for the use of the inhabitants. There were two kinds of bows in use among the English; namely, the long bow and the crossbow, those who used the long bow were called archers in distinction from the crossbowmen.

ARCHIL, a sort of lichen; the name of a violet-red paste, used as a dye stuff.

ARCHIMEDEAN SCREW. A spiral machine for raising water, consisting of a tube rolled in a spiral form round a cylinder, a modification of which has been introduced for propelling steam-vessels.

**ARCHITECT.** One who is skilled in architecture. The architect forms plans and designs for edifices, conducts the work, and directs the artificers employed in it.

**ARCHITECTURE.** The art of building, or the science which teaches the method of constructing any edifice for use or ornament. It is divided into civil, military, and naval architecture, according as the erections are for civil, military, or naval purposes. The two last kinds are otherwise called Fortification, and Naval Architecture or Shipbuilding. (See FORTIFICATION and NAVAL ARCHITECTURE.)

**ARCHITECTURE, HISTORY OF.** The origin of civil architecture, or architecture properly so called, is commonly derived from the building of huts in a conical form, spreading wide at the bottom, and joining in a point at the top, the whole being covered with reeds, leaves, &c. But whatever may have been the form of the first buildings, there is no doubt that the making of regular habitations was one of the first things which necessity suggested to the reason of man; for we find that Cain, the son of Adam, built a city. Tents, or temporary residences, which were only suited to such as lead a wandering life, were not invented before the time of Jubal, the son of Tubal Cain; since that time the Tartars have followed the practice, and the original inhabitants of America did the same. Every nation, in proportion to the degree of civilisation which it has attained, has shown a disposition to exercise their ingenuity in the construction of their residences. Among the Egyptians this art was carried to an extraordinary degree of perfection. Their pyramids, labyrinths, and some ruins of their palaces and other edifices are still to be seen and admired as stupendous monuments of their industry, perseverance, and skill. Near Andera, in Upper Egypt, are the ruins of a palace of gray granite, the ceilings of which are supported by columns of such thickness, that four men can scarcely span them. The grand hall is 112 feet long, 60 high, and 58 broad. The roof of the whole edifice is a terrace, on which once stood an Arabian village. The Babylonians and Persians vied with the Egyptians, both in the grandeur and splendour of their buildings, as may be judged from the ruins still remaining. A staircase was to be seen some time ago, having 95 steps of white marble still standing so broad and flat, that 12 horses might conveniently go abreast.

As these vast structures were not fitted for the general convenience of mankind we must look to the Greeks for the art of architecture as it has since been exercised. From the simple construction of wooden huts, Vitruvius supposes the orders of architecture took their rise. When buildings of wood were superseded by solid and stately edifices of stone, they imitated the parts which necessity had introduced into the primitive huts; so that the upright trees, with the stones at each extremity of them, were the origin of columns, bases, and capitals; and the beams, joists, rafters, and the materials which formed the covering, gave birth to architraves, friezes, triglyphs, cornices, with the corona, mutules, modilions, and dentiles. To bring all these several parts to the state of perfection at which they arrived was the work of long experience and much reasoning, aided by the invention of many tools. The Greeks improved upon the works of the Egyptians, so as to render them, if not so durable, at least more ornamental, and perhaps more really serviceable. The construction of arches was unknown to the ancient Assyrians and Babylonians. The roofs of their

halls were flat, and covered with prodigiously large stones, some of them large enough to cover the whole room. They had columns, but they were ill proportioned, and the capitals were badly executed. The art of proportioning the various parts of a building belongs, in a peculiar manner, to the Greeks, from whom we derive the three principal orders: at the same time it must not be denied, that the Jewish nation had earlier examples of such proportion; and that, in all probability, the Greeks took their idea of a regular order in architecture from the temple of Solomon.

In the Doric Order, which is so called from Dorus, the son of Helenus, and grandson of Deucalion, the column approaches very nearly to the proportions of those to be found in Solomon's temple. This order was first employed by Dorus in the building of a temple at Argos, in honour of Juno, and was formed according to the proportions between the foot of a man and the rest of his body, reckoning the foot to be the sixth part of a man's height: they gave to a Doric column, taking in its chapiter, six of its diameters; that is to say, they made it six times as high as it was thick, but they afterwards added a seventh diameter.

The Ionic Order, which takes its name from the Ionians, in Upper Asia, was formed according to the proportions of a woman; making the height of the column to be eight times greater than the diameter. They also made channeling in the trunk, to imitate the folds in the dress of a woman, and by the volutes in the chapiter they represented that part of the hair which hung in curls on each side of the face; besides the Ionians added a base to their column, which the Dorians originally had not.

The Corinthian Order, which was posterior to the other two, took its rise from an accident related by Vitruvius. A basket, with a tile over it, had been placed on the tomb of a young Corinthian maid, near which grew the herb acanthus, or bear's breech. The leaves of this plant rising up to the tile, then curled themselves down into a sort of volute, which being observed by Callimachus, the sculptor, he took the idea of representing such a circle of leaves in the capital of a column, that has since been characteristic of the Corinthian Order. Scamozzi calls this the virginal order, because it bears all the delicacy in its dress peculiar to young virgins.

The Tuscan, or Etruscan Order, derives its name from the Etruscans, or Pelasgians, who first inhabited Etruria, in Italy; this is therefore looked upon as a Roman Order. It has the proportions of the Doric Order but as it is one of the plainest and simplest orders, it is in all probability one of the most ancient. Vitruvius speaks of the proportions of this order, but there are no certain remains of it, unless we except the Trajan and Antonine pillars at Rome.

The Composite or Roman Order, is so called because it combines the proportions and decorations of the Corinthian Order with the angular volute and dentils of the Ionian, thus forming a new order, which was adopted by the Romans.

Both the Greeks and Romans were in the practice of using the figures of men and women instead of regular columns, whence arose the Persian or Persic Order, in which the statues of men, and the Caryatic Order, in which the statues of women, served to support the entablatures, in the place of columns. The Romans had also their Termini for the support of entablatures, the upper part of which represented the head and breast of a human body, and the lower the inverted frustrum of a square pyramid. Persian figures are generally charged with a Doric entablature; the Caryatides with an Ionic or Corinthian architrave and cornice; and the Termini with an entablature of any of the three Grecian orders.

In their private buildings the Roman architects followed the Greeks; but in their public edifices they far surpassed them in grandeur. Architecture was carried to its highest pitch of perfection in the reign of Augustus. The Pantheon, one of the finest monuments of antiquity, was built by Agrippa, the son in law of Augustus. Some of his successors, particularly Trajan and Antoninus, were no less favourable to the exercise of this art; but on the decline of the empire, architecture shared the fate of other arts, and declined also, but did not altogether drop. New modes of building were introduced, which acquired the name of styles; as the Gothic, Saxon, and Norman styles.

The Gothic style was so called because it was first used by the Visigoths. The Saxon and Norman styles were so called because they were respectively used by the Saxons before the Conquest, and by the Normans after, in the building of churches. The Saxon style was distinguished by the semicircular arch, which they seem to have taken partly from the Romans, and partly from their ancestors on the continent.

The Norman style was distinguished by the following particulars: the walls were very thick, generally without buttresses the arches, both within and with at semi

circular, and supported by very plain and solid columns; of which examples are to be seen in the chancel at Orford, in Suffolk, and at Christ Church, Canterbury. Sometimes, however, the columns were decorated with carvings of foliage or animals, and sometimes with spirals, lozenge, or network.

These two styles continued to be the prevailing modes of building in England until the reign of Henry II., when a new mode was introduced, which was called modern Gothic. Whether this was purely a deviation from the other two modes, or whether it was derived from any foreign source, is not known. It is, however, supposed to be of Saracenic extraction, and to have been introduced by the crusaders. This supposition is strengthened by the fact, that the mosques and palaces of Fez, and also some of the cathedrals in Spain built by the Moors, are in this style; which ought therefore to be called Arabic, Saracenic, or Moresque. This style is distinguished by its numerous buttresses, lofty spires, and pinnacles, large and ramified windows, with a profusion of ornaments throughout. It came into general use in the reign of Henry III.; when the circular gave way to the pointed arch, and the massive column to the slender pillar, of which the present cathedral church of Salisbury, begun at that period, affords the best specimen. From that time to the reign of Henry VIII. the pillars in churches were of Purbeck marble, very slender and round, encompassed with marble shafts a little detached, having each a capital adorned with foliage, which joining formed one elegant capital for the whole pillar. The windows were long and narrow, with pointed arches and painted glass; and the lofty steeples were furnished with spires and pinnacles. In the reign of Henry VIII. a new kind of low pointed arch was introduced, which was described from four centres, was very round at the haunches, and the angle at the top was very obtuse, as may be seen in Cardinal Wolsey's buildings. In the fifteenth and sixteenth centuries the taste for Greek and Roman architecture revived, and brought the five orders again into use, although for sacred edifices the Saxon and Gothic styles still maintain the preeminence. The Italians were for a long time reckoned the greatest architects, but England may also boast of an Inigo Jones and a Sir Christopher Wren, who hold a very high rank in the art. Inigo Jones has left the banqueting house at Whitehall, Queen Catherine's Chapel at St. James's, the Piazza at Covent Garden, and other buildings as proofs of his skill and taste. The works of Sir Christopher Wren even surpass those of his predecessor, both in number and magnitude. Among these stand foremost the Cathedral of St. Paul's, Greenwich Hospital, the Monument, Chelsea Hospital, the Theatre at Oxford, Trinity College Library, and Emmanuel College, Cambridge; besides upwards of fifty-two churches and innumerable other public buildings.

ARCHITECTURE (in Perspective). A sort of building, the members of which are of different measures and modules, and diminish in proportion to their distance, to make the building appear longer and larger to the view than it really is.

ARCHITRAVE. That part of a column or series of columns that is above or lies immediately upon the capital. It is the lowest member of the frieze, and is supposed to represent the principal beam in timber buildings. It is sometimes called the reason piece, as in porticoes, cloisters &c.; and the masterpiece in chimneys.

ARCHIVAULT. The inner contour of an arch, or a frame set off with mouldings, running over the faces of the arch stones and bearing upon the imposts.

ARCHIVES. The place where the records, &c. belonging to the crown and kingdom are kept.

ARCTIC. An epithet for what lies to the north, as the Arctic Circle, the Arctic Pole

AREA. The site or space of ground on which any building is erected.

AREA (in Geometry). The superficial contents of any figure, as a triangle, quadrangle, &c.

ARENA. That part of an amphitheatre where the gladiators contended, so called from the sand with which it was strewed

ARGENT (in Heraldry). The white colour in the coats of arms of baronets knights, and gentlemen.

ARGO NAVIS. A constellation called after the ship of Jason and his companions.

ARGUMENT. Whatever is offered or offers itself to the mind, so as to create belief in regard to any subject or matter laid down.

ARGUMENT (in Astronomy). An arc whereby another arc is to be sought bearing a certain proportion to the first arc.

ARGUMENTUM AD HOMINEM (In Logic). A mode of reasoning, in which an argument is drawn from the professed principles or practice of the adversary.

ARIES. The Ram, a constellation of fixed stars, and the first of the twelve signs of the zodiac, marked (♈).

ARISTOCRACY A form of govern

ment in which the power is vested in the nobility.

ARITHMETIC. The art of numbering or computing by certain rules, of which the four first and simplest are addition, subtraction, multiplication, and division. Vulgar Arithmetic is the computation of numbers in the ordinary concerns of life. Integral Arithmetic treats of whole numbers; Fractional Arithmetic, of fractional numbers; Decimal Arithmetic, of decimal numbers. Universal Arithmetic is the name given to Algebra by Sir Isaac Newton.

ARITHMETIC, HISTORY OF. Of Arithmetic as a science, we know but very little as to its state and progress among the ancients. It is evident, from the bare consideration of our wants, and earliest impressions, that some knowledge of numbers or some mode of computation, however imperfect, was coeval with society; and as the transactions of men became more complicated, it is reasonable to infer that they would hit on devices for facilitating and simplifying their calculations. Josephus asserts that Abraham, having retired from Chaldea into Egypt, during the time of a famine, was the first who taught the inhabitants of that country a knowledge both of arithmetic and astronomy, of which they were both before ignorant; a circumstance the more probable, as it is well known that the science of astronomy was first cultivated among the Chaldeans, and such advances made in that science as could not have been effected without the aid of arithmetical calculations.

The Greeks imagined that the science of arithmetic, as well as that of geometry, originated with the Egyptians; but this notion, as far as respects priority of discovery, was evidently erroneous, and no doubt arose from the circumstance of their having derived all their first ideas of the arts and sciences, as well as many of their deities from the Egyptians. Thus, as the Egyptians believed that they were taught numbers by their god Theut or Thot, who presided over commerce, the Greeks assigned a similar office to their god Mercury. As the Phœnicians were the first trading people, they naturally addicted themselves to the science and practice of arithmetic, which led Strabo to observe that the invention of the art belonged to them; but, as the Chaldeans were a more ancient people, this supposition is no less erroneous than the former. What advances were made by these people in the science we have no means of ascertaining, for nothing remains of the early writings on this subject except what may be gathered from the commentary of Proclus on the First Book of Euclid's Elements. It appears that almost all nations were led to fix upon the same numeral scale, or the common method of notation, by dividing numbers into tens, hundreds, and thousands; a practice doubtless derived from the custom, so universally adopted in childhood, of counting by the fingers; which, being first reckoned singly from one to ten, and then successively over again, would naturally lead to the decimal scale or the decuple division of numbers. But they represented their numbers by means of the letters of the alphabet in the place of the modern numerals. Thus the Jews divided their alphabet into nine units, nine tens, and nine hundreds, including the final letters, as א Aleph, 1, ב Beth, 2, &c. to י Yod, 10; then כ Caph, 20, ל Lamed, 30, &c. to ק Koph, 100, ר Resh, 200, &c. to ץ Tsadi final, 900. Thousands were sometimes expressed by the units annexed to hundred, as אלף, 1434; sometimes by the word אלף, 1000, אלפים, 2000, and with the other numerals prefixed, to signify the number of thousands. To avoid using the divine name of יהוה, Jehovah, in notation, they substituted יה for fifteen. To the alphabet of the Greeks were assigned two numerical powers, namely, a power to each letter in order, as α, Alpha, 1, &c. to ω Omega, 24, and a power similar to that adopted by the Jews, as α Alpha, 1, &c to κ Kappa, 10, &c.; to ω Omega, 800, then 900 was expressed by the character ϡ and the thousands were denoted by a point under the letters after this manner, $\dot{\alpha}$, 1000, $\dot{\beta}$ 2000, &c.; the number of 10,000 was sometimes expressed by a small dash over the iota thus $\iota'$, but mathematicians employed the letter M, which, by placing under the small letters, indicated the number of thousands, as $\alpha^{M}$ for 10,000, $\beta^{M}$ for 20,000, &c.

Diophantus and Pappus made Mυ to represent 10,000, and then by the addition of the letters, as βMυ, for 20,000, &c. Apollonius divided numbers into periods of four characters, to which he gave a local value very similar to the modern mode of notation. The Greeks, however, were enabled, by means of their letters, to perform the common rules of addition, subtraction, multiplication, and division, from which no doubt, the idea was taken of working with letters in our Algebra; for it is worthy of observation that in their multiplication they proceeded from left to right as in the

multiplication of algebra at present. The Greeks had likewise another kind of notation by means of capitals, more properly initials of the names of numbers, and were used in inscriptions, as I for ια, or μια, 1, Π for πεντε, 5, Δ for δεκα, 10, &c. The Roman notation, which is still used in marking dates, and numbering chapters, &c consists of five of their capital letters, namely, I one, V five, X ten, L fifty, C one hundred, which are increased in this manner: the repetition of the I's increases numbers by units, as II for two, III for three, &c.; that of X's increases numbers by tens, as XX for twenty, XXX for thirty, &c.; and that of C's increases numbers by hundreds, as CC for two hundred, CCC for three hundred, &c.; also a less character before a greater diminishes the value of the number, as I before V, thus, IV, makes it four, I before X, thus, IX, makes it nine: on the other hand, a less character after a great r increases the value of the number, as I after V, thus, VI, makes it six, and I after X, thus, XI, makes eleven. In what manner the Romans performed their arithmetical operations is not known; but it is most probable that, as they were not a commercial nation, they followed the simplest forms of calculation: we must therefore look for further information on this subject to the period when the Arabs or Saracens introduced into Europe their mode of notation, which is not only distinguished from the others by the peculiarity of the characters, but also by their value and disposition. Although this notation consists of only nine digits, with the cipher 0, yet, by giving a local power to these figures, namely, that of units, tens, hundreds, thousands, &c. they may be made to express numbers to an indefinite extent. Besides, this mode also presents many advantages by the additional facility with which all arithmetical operations are thus performed. By what nation this improvement was first made is not known. The Greeks, as before observed, were making advances towards it by giving a local value to certain periods of four numbers each, but it does not appear that they proceeded any further The Arabs introduced it into Europe about eight hundred years back, whence it soon circulated among the different European nations; but although the first use of this scale is commonly ascribed to them, yet they acknowledge themselves indebted to the Indians for it; and as this latter people were in many respects very ingenious, it is not at all improbable that they were the authors of the invention. The cultivation of arithmetic in Europe may be dated from the thirteenth century, when Jordanus of Namur, the first writer on the subject that we know of, flourished His arithmetic was published with illustrations, by Joannes Faber Stapulensis, in the fifteenth century, but was less perfect than the treatises of Lucas de Burgo and Nicholas de Tartaglia in that and the subsequent centuries. In France, the subject of arithmetic was handled about the same time by Clavius and Ramus; in Germany, by Sturmius, Stifelius and Henischius; and in England by Recorde, Diggs, and Buckley. After that period the writers on arithmetic became too numerous to be particularly specified, but the names of Briggs, Emerson, Napier, Maclaurin, Hutton, and Bonnycastle, are entitled to notice for having systematized, enlarged, and in many particulars simplified the science.

ARK. The floating vessel in which Noah and his family were saved from the flood It was 500 feet long, 90 broad, and 50 high

ARK OF THE COVENANT, or Moses' Ark. The chest in which the stone tables of the ten commandments, written by the hand of God, were laid up.

ARMADILLA. A quadruped, a native of Brazil and the West Indies, with the snout of a pig, the tail of a lizard, and the feet of a hedgehog. He is armed with a coat of impenetrable scales, under which he retires like a tortoise.

ARMILLARY SPHERE (in Astronomy). An artificial sphere, composed of a number of circles, of metal, wood, or paper, representing the several circles of the sphere of the world put together in their natural order. The armillary sphere revolves upon an axis within a silvered horizon, which is divided into degrees, and moveable every way upon a brass supporter. In Pembroke Hall, Cambridge, there is an armillary sphere constructed by Dr. Long, which is eighteen feet in diameter, and will contain more than thirty persons sitting within it, to view, as from a centre, the representation of the celestial spheres. That part of the sphere which is not visible in England is cut off; and the whole is so contrived, that, by being turned round, it

exhibits all the phenomena of the heavenly bodies.

ARMORY. A branch of the science of heraldry, consisting in the knowledge of armorial bearings or coats of arms, which serve to distinguish the quality of the bearer.

ARMOUR. All such habiliments as serve to defend the body from wounds inflicted by darts, swords, lances, &c.

ARMY. A body of soldiers consisting of horse and foot, under the command of a general and subordinate officers, and completely equipped and disciplined for service. An army is generally divided into a certain number of corps, each consisting of brigades, regiments, battalions, and squadrons; when in the field, it is formed into lines; the first line is called the vanguard, the second the main body, the third the rearguard, or body of reserve. The middle of each line is occupied by the foot, the cavalry forms the right and left wing of each line, and sometimes squadrons of horse are placed in the intervals between the battalions

AROMA. A general name for all sweet spices, but particularly myrrh; also the odoriferous principle which produces the fragrance peculiar to some plants.

ARRAC. A spirituous liquor distilled in India from the cocoa tree, rice, or sugar It is very strong, and intoxicates more than rum or brandy.

ARRAIGNMENT (in Law). The bringing a prisoner forth, reading the indictment to him, and putting the question of guilty or not guilty.

ARRAY. The drawing up of soldiers in order of battle.

ARREARS. Money unpaid at the due time, as rent, moneys in hand, &c.

ARREST (in Law). The apprehending and restraining a man's person in order to compel him to be obedient to the law This, in all cases except treason, felony or breach of the peace, must be done by the lawful warrant of some court of record or officer of justice. Arrest of judgment is the staying of judgment, or not proceeding to judgment.

ARROW. A missile weapon, which is commonly discharged from a bow When this weapon is borne in coats of arms it is said to be barbed and feathered.

ARROW-ROOT. An Indian root, of which starch is made It is also used medicinally

ARSENAL. A public storehouse for arms and all sorts of ammunition.

ARSENIATE. A sort of salts formed by the combination of arsenic acid with different bases, as the arseniate of ammonia, &c

ARSENIC. A ponderous mineral body It is yellow, white, and red. Yellow arsenic is the native arsenic dug out of the mines, otherwise called Arsenic Ore. White arsenic is drawn from the yellow by sublimating; and is reduced to powder by the mixture of oxygen, or exposure to the air This is sometimes used in medicine in small quantities, but is otherwise a deadly poison. Red arsenic is the yellow arsenic rubified by fire, when it is called realgal.

ARSENITE. A sort of salts formed by the combination of arsenious acid with different bases.

ARSIS (in Grammar). The elevation of the voice, in distinction from thesis or the depression of the voice. Arsis and thesis in Ancient Music, is applied to the raising and falling of the hand in beating of time

ARTERY. A hollow, fistulous, conical canal, which serves to receive the blood from the ventricles of the heart, and to distribute it to all parts of the body.

ART. The contrivance and use of things by the help of thought and experience.

and according to prescribed rules, so as to make them serve the purposes for which they were designed. Liberal or fine arts are those which are noble and worthy to be cultivated without regard to lucre, as painting, poetry, music, &c. Mechanic arts are those wherein the hand and body are more concerned than the mind. Terms of art are such words as are used in regard to any particular art, profession or science.

ARTICHOKE A plant very like the thistle, with scaly heads similar to the cone of the pine tree. At the bottom of each scale, as also at the bottom of each floret, is the well known fleshy edible substance. The Jerusalem Artichoke is a plant, the root of which resembles a potatoe, having the taste of the artichoke

ARTICLE (in Law). The clause or condition in a covenant.

ARTICLE (in Grammar) A particle, which in most languages serves to denote the gender and case of nouns; and in languages which have not different terminations it serves to particularize the object referred to.

ARTICULATION (in Anatomy). The junction of two bones intended for motion. There are two kinds; the diarthrosis, which has a manifest motion, and synarthrosis, which has only an obscure motion.

ARTICULATION. The articulate or distinct utterance of every letter, syllable, or word, so as to make oneself intelligible.

ARTIFICERS. Persons employed in the performance of mechanical arts.

ARTILLERY. A collective name denoting all engines of war, but particularly cannon, mortars, and other large pieces, for the discharge of shot and shells. It is also employed to denote the science which teaches all things relating to the artillery, as the construction of all engines of war, the arrangement, movement, and management of cannon and all sorts of ordnance, used either in the field, or the camp, or at sieges, &c.

ARTIODACTYLA. A division of the hoofed quarrupeds, in which each foot has an even number of toes, as two or four.

ARTOCARPUS. The bread fruit tree of the South-Sea Islands.

ARTISTE. A term of extensive use among the French, to denote one who is particularly dextrous in the art which he practises, of whatever nature it may be, as an opera-dancer, a hair-dresser, cook, etc.

ARTOTYRITE. One of a sect of heretics, in the primitive church, who celebrated the eucharist with bread and cheese.

ARTIST A proficient in the fine arts.

ARUNDELIAN MARBLES Ancient marbles illustrative of the history and mythology of the ancients, so called from the Earl of Arundel, by whom they were transported from the island of Paros into England. They contain a chronicle of the city of Athens, supposed to have been inscribed thereon 264 years before Christ.

ASA-FŒTIDA. A gum resin of a very fetid smell, obtained from the ferula asa fœtida, a perennial plant, which is a native of Persia. It comes into this country in small grains of different colours, hard and brittle.

ASBESTOS. A mineral substance, of which Amianthus is one of its principal species. This consists of elastic fibres, somewhat unctuous to the touch, and slightly translucent. The ancients manufactured cloth from the fibres of the asbestos for the purpose, as is said, of wrapping up the bodies of the dead when exposed on the funeral pile; it being incombustible in its nature. It is found in many places in Asia and Europe.

ASCARIDES. Worms that infest the intestinum rectum, and cause a violent itching; also a kind of worms which infest the intestines of all animals.

ASCENSION (in Astronomy). That degree of the equator reckoned from the first of Aries eastward, which rises with the sun or a star. This is either right or oblique according as it rises in a right or an oblique sphere.

ASCENSIONAL DIFFERENCE The difference between the right and the oblique ascension in any point of the heavens.

ASCENT. The rising of fluids in a glass tube or any vessel above the surface of their own level.

ASH. A well known tree, the timber of which is next to the oak in value, being used in every sort of handicraft.

ASHES. The earthy substances remaining after combustion, which contain an alkaline salt; also the skimmings of metal among the letter-founders.

ASH-WEDNESDAY. The first day in Lent, so called from the custom of fasting in sackcloth and ashes

ASP. A very small kind of serpent, peculiar to Egypt and Libya, the bite of which is deadly. Its poison is so quick in its operations, that it kills without a possibility of applying any remedy. Those that are bitten by it are said to die within three hours, by means of sleep and lethargy

without any pain; wherefore Cleopatra chose it as the easiest way of dispatching herself.

ASPARAGUS. A valuable esculent plant, which requires three years at least to bring it to maturity from the time of sowing the seed, and will not yield vigorously without a continual supply of manure.

ASPEN-TREE. A kind of white poplar, the leaves of which are small, and always trembling.

ASPHALTUM, or Jews' Pitch. A solid, brittle, ponderous substance, which breaks with a polish, and melts easily. It is found in a soft or liquid state on the surface of the Dead Sea, a lake in Judea, and by time grows dry and hard. The Egyptians used asphaltum in embalming, which they called mumia mineralis

ASS. A well known useful quadruped, remarkable for its patience, hardiness, and long life. The milk of the female is highly esteemed for its light and nutritious quality, and for that reason recommended for consumptive persons.

ASPERGILLUS. The brush used in the Roman Catholic church to sprinkle holy water on the people. In Botany a genus of fungi.

ASPHODEL. A name of the day-lily, king's spear, and other elegant plants of the genus asphodelus.

ASPHURELATA, or ASPHURELATES. A series of semi-metallic fossils, including bismuth, antimony, cobalt, zinc, and quicksilver; thus called because in their purest state they are not malleable.

ASS. A well-known quadruped of the equine genus; figuratively, a dull, stupid fellow; a dolt.

Assagay. A tall tree of South Africa, of which the natives make javelins or spears; a spear made of this wood.

ASSASSINS. A tribe or clan called Ismaelians, who settled on the mountains of Lebanon, about 1090, and became remarkable for their assassinations.

ASSETS. The stock in trade and entire property of a merchant or of a trading association; goods or estate of a deceased person subject to the payment of his debts; the property of an insolvent debtor.

ASSIDEANS. A name given in the first book of Maccabees, ii. 42, to a sect of Jews, who armed themselves under Mattathias to resist the introduction of the Grecian manners and idolatries into Judea.

ASSIENTO. A contract formerly entered into between the kings of Spain and foreign merchants, relative to the importation of negro slaves into the Spanish dominions in South America.

ASSAM TEA. In botany, a valuable kind of tea, raised and manufactured in the upper district of India.

ASPHYXIA, or ASPHYXY. In pathology, the state of the body in which the pulse is so low as not to be felt: but now applied by the faculty to the symptoms of suffocation produced by an accumulation of carbonic acid in the blood; the vital phenomena being suspended, but life not extinct.

ASSAYING. The particular mode of trying ores or mixed metals by means of proper fluxes, in order to discover the proportion of metal, as also of the other ingredients, as alum, sulphur, vitriol, and the like, which are contained in them. Gold is obtained pure by dissolving it in nitro-muriatic acid, when the metal may be precipitated by dropping in a diluted solution of sulphate of iron; the precipitate which is in the form of a powder is pure gold. Silver is obtained pure by dissolving it in nitric acid, and precipitating it with a diluted solution of sulphate of iron

ASSIDENT. In pathology, an epithet applied to symptoms that accompany disease. Assident signs are those particular indications which attend disease.

ASSIGNATS. Paper money issued by the French Government during the first Revolution.

ASSIGN (in Law). One to whom any thing is assigned or made over, as an executor, &c.; also an assignee or assign to a bankrupt's estate.

ASSIGNMENT. A transfer or making over to another the right one has in any estate, usually applied to an estate for life or years. It differs from a lease in this, that by an assignment one parts with the whole interest one has in the thing, but by a lease he reserves himself a reversion.

ASSIMILATION (in Physics). The process in the animal economy by which the food is converted into nourishment for the body.

ASSIZE (in Law). An assembly of knights and other substantial men, who, with the justices, met at a certain time and in a certain place for the due administration of justice. In the modern application it signifies a sitting of the judges by virtue of a commission, to hear and determine causes. The assizes are general when the justices go their circuits, with commission to take all assizes, that is, hear all causes; they are special when special commissions are granted to hear particular causes.

ASSOCIATION. The connexion of ideas in the human mind which for the most part immediately follow one another, whether there is any natural relation between them or not.

ASSUMPSIT (in Law). A voluntary promise by which a man binds himself to pay any thing to another, or to do any work.

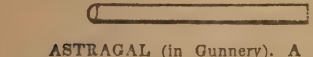
ASSURANCE, or INSURANCE. An engagement by which a person becomes bound for a specified sum, and for a limited period, to indemnify another for any losses which his property may sustain from fire or shipwreck, &c.

ASTERISK. A star (*) used in printing as a mark of reference.

ASTEROID. A name given to four planets between the orbits of Mars and Jupiter, viz., Ceres, Pallas, Juno, and Vesta.

ASTHMA. A painful, difficult, and laborious respiration, with a sense of stricture across the breast, that sometimes approaches to suffocation.

ASTRAGAL (in Anatomy). The ankle bone; in Architecture, a small round moulding serving as an ornament to the tops and bottoms of columns



ASTRAGAL (in Gunnery). A small moulding encompassing a cannon.

ASTROLABE. An instrument for taking the altitude of the sun or stars at sea.

ASTROLOGY. An art formerly much cultivated, but now exploded, of judging or predicting human events from the situation and different aspects of the heavenly bodies.

ASTRONOMY. The science which treats of the sun, moon, earth, planets, and other heavenly bodies, showing their magnitudes, order, and distances from each other, measuring and marking their risings, settings, motions, appearances, the times and quantities of their eclipses, &c. It comprehends what was anciently called the doctrine of the sphere, and is a mixed mathematical science.

ASTRONOMY, History of. Of all the sciences which have engaged the attention of mankind, none appears to have been cultivated so early as that of astronomy, which treats of the noblest and most interesting objects of contemplation. Josephus informs us that Seth, the son of Adam, is said to have laid the foundations of this science, and that his posterity, understanding from a prediction of Adam that there would be a general destruction of all things, once by the rage of fire and once by the violence and multitude of waters, made two pillars, one of brick and the other of stone, and engraved their inventions on each, that if the pillar of brick happened to be overthrown by the flood that of stone might remain; which latter pillar, Josephus adds was to be seen in his day. He also ascribes to the antediluvians a knowledge of the astronomical cycle of 600 years, but upon what authority we are not informed.

The account is, however, not improbable; for historians generally agree in assigning the origin of astronomy to the Chaldeans soon after the deluge, when, for the purpose of making their astrological predictions, to which they were much addicted, as also for that of advancing the science of astronomy, they devoted themselves to the study of the heavenly bodies. The Chaldeans were in fact a tribe of Babylonians, who constituted the priests, philosophers, astronomers, astrologers, and soothsayers of this people, whence a Chaldean and a soothsayer became synonymous terms. These Chaldeans discovered the motions of the heavenly bodies; and, from their supposed influences on human affairs, pretended to predict what was to come. The planets they called their interpreters, ascribing to Saturn the highest rank; the next in eminence was Sol, the sun; then Mars, Venus, Mercury, and Jupiter. By the motions and aspects of all these they foretold storms of wind and of rain, or excessive droughts, as also the appearance of comets, eclipses of the sun and moon, and other phenomena. They also marked out thirty-six constellations, twelve of which they placed in the zodiac, assigning to each a month in the year, and thus dividing the zodiac into twelve signs, through which they taught that the several planets performed their revolutions. They appear not to have had much idea of the immense distance of some of the planets from the sun, but accounted for the time they took in performing their revolutions by the slowness of their motions. They, however, held that the moon completed her course the soonest of any, not because of her extraordinary velocity, but because her orbit, as it would now be called, was less than that of any of the heavenly bodies. They taught that she shone with a light not her own, and that when eclipsed she was immersed in the shadow of the earth. Of the eclipses of the sun they appear to have had no just idea, nor could they fix the time when they should happen. Their ideas of the earth as a celestial body were also crude and imperfect.

Astronomy was cultivated in Egypt nearly about the same time as among the Chaldeans; and, according to the opinions of some, the honour of the invention is due to them: but the most probable conclusion is, that as these two nations were coeval, and both addicted to the arts and sciences,

they cultivated astronomy at the same time. The Egyptians had at a very early period their college of priests, who were all accurate observers of the stars, and kept, as Diodorus observes, registers of their observations for an incredible number of years. It is said, that in the monument of Osymandyas there was a golden circle of 365 cubits in circumference and one cubit thick, divided into 365 parts, answering to the days of the year, &c. The Egyptians discovered that the stars had an annual motion of 50″,9‴,45⁗ in the year; and Macrobius asserts that they made the planets revolve about the sun in the same order as we do. From Chaldea and Egypt astronomy passed into Phœnicia, where it was applied by that trading people to the purposes of navigation. The Arabians also, one of the most ancient nations in the world, cultivated astronomy as far as was needful to answer the ends of their pastoral life, by observing the stars, their position, and influence on the weather. In travelling through the desert, we are informed that, at a very early period, they used to direct their course by the Great and Little Bear, as is done at sea to this day. They also gave names to the stars, mostly in allusion to their flocks and herds; and they were so nice in this matter that no language abounds with so many names of stars and asterisms as the Arabic.

As to the Indians and Chinese there is no doubt but that they cultivated astronomy at a very early period, and that the Brahmins of the former people, being altogether devoted to speculative sciences, made advances in that of astronomy equal to any of the nations of antiquity. M. Bailly informs us, in his history, that he examined and compared four different sets of astronomical tables of the Indian philosophers, namely, that of the Siamese explained by M. Cassini in 1689: that brought from India by M. le Gentil, of the Academy of Sciences, and two other manuscript tables, found among the papers of the late M. de Lisle; all of which he found to accord with one another, referring to the meridian of Benares. It appears that the Indians date their astronomy from a remarkable conjunction of the sun and moon which took place at the distance of 302 years before Christ; and M. Bouilly concludes that, from our most accurate astronomical tables, such a conjunction did take place. The Indians calculate eclipses by the mean motions of the sun and moon, commencing at a period five thousand years distant; but, without giving them credit for an antiquity which is at variance with all historical documents, sacred and profane, it suffices here to observe that they have adopted the cycle of nineteen years, and that their astronomy agrees with modern discoveries in many particulars, as to the obliquity of the ecliptic, and an acceleration of the motion of the equinoctial points. They also assign inequalities to the motions of the planets, answering very well to the annual parallax, and the equation of the centre.

The Greeks, without doubt, derived their astronomical knowledge from the Egyptians and Phœnicians by means of several of their countrymen, particularly Thales the Milesian, who, about 640 years before Christ travelled into Egypt, and brought from thence the chief principles of the science. He was the first among the Greeks who observed the stars, the solstices, the eclipses of the sun and moon, and proceeded so far as to predict an eclipse of the sun. It appears, however, that, before his time, many of the constellations were known, for we find mention of them in Hesiod and Homer, two of their earliest writers. After Thales, Anaximander, Anaximenes, Anaxagoras, but above all, Pythagoras, distinguished themselves among the number of those who cultivated astronomy. The latter, after having resided a long time in Egypt and other foreign parts, established a sect of philosophers in his own country, known by the name of Pythagoreans. He taught, among other things, that the sun was in the centre of the universe and immovable; that the earth was round, and the inhabitants were antipodes to each other; that the moon reflected the rays of the sun, and was inhabited like the earth; that comets were wandering stars; that the milky way was an assemblage of stars, which derived its white colour from the brightness of their light; besides a number of other particulars some of which are admitted in the present day. Philolaus, a Pythagorean, maintained the doctrine of the earth's motion round the sun, 450 years before Christ, and Hicetus, a Syracusan, taught, a hundred years after, the diurnal motion of the earth on its own axis; also Meton, the inventor of the Metonic cycle, and Euctemon, observed the summer solstice 432 years before Christ, besides the risings and settings of the stars, and what seasons they answered to. The same subject was treated of at large by Aratus in his poem entitled Phœnomena. Eratosthenes, a Cyrenian, who was born in 271 B. C. measured the circumference of the earth; and, being invited to the court of Ptolemy Evergetes at Alexandria, he was made keeper of the royal library, and set up there the armillary spheres which Hipparchus and Ptolemy afterwards used in

effectually. He also determined the distance between the tropics to be 11-83 of the whole meridian circle, which makes the obliquity of the ecliptic in his time to be 23 degrees, 51 minutes and one-third. Archimedes is said to have constructed a planetarium to represent the phenomena and motions of the heavenly bodies; and many others added to the stock of astronomical knowledge, but none so much as Hipparchus, who flourished about 140 years B. C. and surpassed all that had gone before him in the extent of his researches. He showed that the orbits of the planets were eccentric, and that the moon moved slower in her apogee than in her perigee. He constructed tables of the motions of the sun and moon; collected accounts of eclipses that had been computed by the Chaldeans and Egyptians; and calculated such as would happen for six hundred years to come; besides correcting the errors of Eratosthenes in his measurement of the earth's circumference, and computing the sun's distance more accurately. He is, however, most distinguished by his catalogue of the fixed stars to the number of a thousand and twenty-two, with their latitudes and longitudes, and apparent magnitudes. These and most other of his observations are preserved by his illustrious successor Ptolemy.

From the time of Hipparchus to that of Ptolemy, an interval of upwards of two centuries, few or no advances were made in astronomy. Claudius Ptolemy, who was born at Pelusium in Egypt, in the first century of the Christian era, is well known as the author of a great work on astronomy, entitled his Almagest, which contains a complete system of astronomy drawn from the observations of all preceding astronomers in union with his own. He maintained the generally received opinion of the sun's motion, which continued to be universally held until the time of Copernicus. The work of Ptolemy being preserved from the grevious conflagration that consumed the Alexandrian library during the ravages of the Saracens, was translated out of the Greek into the Arabic, A. D 827 and, by the help of this translation, the Arabians, who now addicted themselves to the study of astronomy, cultivated it with great advantage under the patronage of the caliphs, particularly Al Mamon, who was himself an astronomer, and made many accurate observations by the help of instruments, which he himself constructed. He determined the obliquity of the ecliptic in his time to be 23 degrees, 35 minutes. Among the Arabian authors of this period was Alfragan, who wrote his Elements of Astronomy, and Albetegnius, who flourished about 880. This latter compared his own observations with those of Ptolemy, and computed the motion of the sun's apogee from Ptolemy's time to his own. He also composed tables for the meridian of Arabia, which were much esteemed by his countrymen. After this, Ebn Younis, astronomer to the caliph of Egypt, observed some eclipses, by means of which the quantity of the moon's acceleration since that time has been determined; also Arzechel, a Moor of Spain, observed the obliquity of the ecliptic; and Alhazen his contemporary, wrote on the twilight, the height of the clouds, and the phenomena of the horizontal moon. He likewise first employed the optical science in astronomical observations, and showed the importance of the theory of refraction in astronomy.

In the thirteenth century, astronomy as well as other arts and sciences, began to revive in Europe, particularly under the auspices of the emperor Frederick II.; who, besides restoring some decayed universities, founded a new one, and in 1230 caused the works of Aristotle, and the Almagest of Ptolemy to be translated into Latin. Two years after this, John de Sacro Bosco, or John of Halifax, published his work De Sphæra, a compendium of astronomy drawn from the works of Ptolemy Alfragan, Albetegnius, and others. This was held in high estimation for some centuries, and was honoured with a commentary from the pen of Clavius and other learned men. In 1240, Alphonsus king of Castile, a great astronomer himself, and an encourager of astronomers, corrected with their assistance the tables of Ptolemy which, from him, were called the Alphonsine tables. About the same time Roger Bacon published his tracts on astronomy and shortly after Vitellio, a Polander, in his treatise on optics, showed, in accordance with Alhazen, the use of refraction in astronomy. Nearly two centuries elapsed from this period before any farther progress was made in the science, when Purbach composed new tables of sines for every ten minutes, constructed spheres and globes, wrote commentaries on Ptolemy's Almagest, corrected the tables of the planets and the Alphonsine tables, determined the obliquity of the ecliptic at 23 degrees, 33 minutes and a half, and begun, at his death, a new series of tables for computing eclipses. He was succeeded by John Muller, commonly called Regiomontanus, Bernard Walther, John Werner, and others. John Werner showed that the

motion of the fixed stars, since called the precession of the equinoxes, was about 1 degree, 10 minutes, in a hundred years. The celebrated Copernicus came next in order, who distinguished himself by calling in question the Ptolemaic system of the universe, and reviving that of Pythagoras. After making a series of observations, and forming new tables, he completed in 1530 his work, first published under the title of De Revolutionibus Cœlestium Orbium, and afterwards under that of Astronomia Instaurata, in which he set forth the system since known by the name of the solar system, in which all the planets are considered as revolving round the sun as their immovable centre

The science of astronomy henceforth continued to receive regular accessions and improvements by a series of writers, as Schoner, Nonnius, Appian, Gemma Frisius, Byrgius, &c. Besides, William IV., landgrave of Hesse Cassel, applying himself to the study, formed, by the help of the best instruments then to be procured, a catalogue of four hundred stars, with their latitudes and longitudes adapted to the beginning of the year 1593. About this time the Copernican system found a strenuous though unsuccessful opponent in Tycho Brahe, a Danish nobleman, who, to obviate the objections against the Ptolemaic system, advanced an hypothesis of his own, which added less to his reputation than the accurate observations which he made by the help of improved instruments in a new observatory built for him by order of the king of Denmark. His friend Kepler, who enjoyed the title of mathematician to the emperor, finished his tables after his death, and published them under the title of Rhodolphine tables. This latter astronomer discovered that all the planets revolve round the sun, not in circular but in elliptical orbits; that their motions are not equable, but quicker and slower as they are nearer to the sun or farther from him; besides a number of other observations on the motions and distances of the planets. He also concluded, from his observations on the comets, that they are freely carried about among the orbits of the planets in paths that are nearly rectilinear. To the astronomers of this age may be added Bayer, who, in his Uranometria, has given a representation of all the constellations, with the stars marked on them, and accompanied with the Greek letters for the convenience of reference

The seventeenth century added many great names to the list of astronomers, as Galileo Huygens, Cassini, Hevelius, Newton, and Flamstead, &c. As the Copernican system had met with an opponent in one that ranked high in the science, it found a defender in Galileo, an Italian nobleman, who in his Dialogi, in 1632, drew a comparison between the Ptolemaic and Copernican system, much to the advantage of the latter, for which he incurred the censures of the church, as the doctrine of the sun's immobility was looked upon as directly opposed to the express language of Scripture. Although Galileo professed to recant in order to obtain his liberation from prison, yet the system daily gained ground, and became at length established Galileo besides made many accurate observations in astronomy, and was one of the first who, by improving the new invention of the telescope, was enabled to employ them in advancing his favourite science. By this means he is said to have discovered inequalities in the moon's surface, Jupiter's satellites, and the ring of Saturn; so likewise spots in the surface of the sun, by which he found out the revolution of that luminary on its own axis. He also ascertained what Pythagoras had conjectured, that the milky way and the nebulæ consisted of innumerable small stars. Harriot made similar discoveries in England at the same time, if not earlier. Hevelius, by means of his observations, formed a catalogue of fixed stars much more complete than that of Tycho's. Huygens and Cassini discovered the satellites of Saturn, and Sir Isaac Newton demonstrated, from physical considerations, the laws which regulated the motions of the heavenly bodies, and set bounds to the planetary orbs, determining their excursions from the sun, and their nearest approaches to him; he also explained the principle which occasioned that constant and regular proportion, observed both by the primary and secondary planets in their revolutions round their central bodies, and their distances compared with their periods. His theory of the moon, grounded on the laws of gravity and mechanics, has also been found to account for all her irregularities Mr Flamstead filled the office of Astronomer Royal at Greenwich from 1675 until his death in 1729, during which time he was constantly employed in making observations on the phenomena of the heavens As the result of his labours he published a catalogue of three thousand stars, with their places to the year 1689; also new solar tables, and a theory of the moon according to Horrox. On his tables was constructed Newton's theory of the moon, as also the tables of Dr. Halley, who succeeded him in his . in 1729 Besides composing

tables of the sun, moon, and planets, Dr. Halley added to the list of astronomical discoveries, being the first who discovered the acceleration of the moon's mean motion. He also contrived a method for finding her parallax by three observed places of a solar eclipse, and showed the use that might be made of the approaching transit of Venus in 1761, in determining the distance of the sun from the earth, and recommended the method of determining the longitude by the moon's distance from the sun and certain fixed stars, which was afterwards successfully adopted by Dr. Maskelyne, Astronomer Royal.

It was about this period that the question respecting the figure of the earth appears to have been satisfactorily decided, and in favour of Newton's theory. M. Cassini concluded, from the measurement of M. Picard, that it was an oblong spheroid, but Sir Isaac Newton, from a consideration of the laws of gravity, and the diurnal motion of the earth, had determined its figure to be that of an oblate spheroid flattened at the poles, and protuberant at the equator. To determine this point Louis XV. ordered two degrees of the meridian to be measured, one under or near the equator, the other as near as possible to the poles; the expedition to the north being intrusted to Messrs. Maupertuis and Clairaut, that to the south to Messrs. Condamine, Bouguer, and Don Ulloa. Among the many observations made by those who went on this expedition, it was found by those who went to the south that the attraction of the mountain of Peru had a sensible effect on the plumb lines of their large instruments, which is supposed to afford an experimental proof of the Newtonian doctrine of gravitation. A similar observation has since been made by Dr. Maskelyne on the mountain Schehallien in Scotland.

The eighteenth century was marked by the discoveries of Dr. Bradley, the successor to Dr. Halley as Astronomer Royal, and Dr. Herschel, who also filled the same post so honourably to himself. Dr. Bradley discovered the aberration of light, and the mutation of the earth's axis, besides having formed new and accurate tables of the motions of Jupiter's satellites, and the most correct table of refractions that is extant: also with a large transit instrument, and a new mural quadrant of eight feet radius, he made observations for determining the places of all the stars in the British catalogue, and likewise nearly a hundred and fifty places of the moon. Dr. Herschel, by augmenting the powers of the telescope beyond any thing existing before or even thought of, succeeded in discovering a new planet, which he named the Georgium Sidus; he also discovered two additional satellites to Saturn, besides those of his own planet. Among those who cultivated the higher branches of the science, and distinguished themselves by their researches, Dr. Maskelyne, the predecessor of Dr. Herschel, ranks the foremost, having been the originator of the Nautical Almanac, and brought into use the lunar method of determining the longi tude, &c. besides making the requisite tables. The theoretical part of the science was indebted to Clairaut, Euler, Simpson, de la Caille, Kiel, Gregory, Leadbetter, for many correct observations and elucidations. The practical part acquired a systematic form and many improvements from the pens of Lalande, Fergusen, Emerson, Bonnycastle, Vince, &c. The historians of the science are Weilder, in his History of Astronomy; Baillie, in his History of Ancient and Modern Astronomy; Montuccla, in his Histoire des Mathematiques; and Lalande, in the first volume of his Astronomy.

The Nineteenth Century has been characterised by great advances in the science. Early in the Century, Ceres, Pallas, Juno and Vesta were discovered, revolving in the space between Mars and Jupiter, and numbers of others have been added since. During the year 1878, eleven were discovered, making altogether 191 Asteroids or minor planets. The discovery or practical application of spectrum analysis by Bunsen and Kirchhoff in 1859, has produced marvelous results. The innermost secrets of the solar composition have been laid bare, whilst the great scientists Lockyer, Crova, Crookes, Huggins, Draper and Young are still busily at work in investigating and expounding solar phenomenon.

ASTROSCOPE. An astronomical instrument for making observations of the stars, and ascertaining their position in the heavens.—Astroscopy is the art of examining the stars by the agency of telescopes.

ASTROTHEMATIC. The places of the stars in an astrological scheme of the heavens.

ASTROTHEOLOGY. Theology founded on observation of the heavenly bodies, presenting proofs of the existence and omniscience of a Deity.

ASYMPTOTE. In mathematics, a right line which continually approaches nearer and nearer to a curve, without ever meeting it.

ATACAMITE. A native ore of copper, called also copper-sand, found in the desert of Atacama between Chili and Peru.

ATOMIC THEORY. In chemistry, the doctrine which teaches that the atoms of elementary substances become combined in certain definite proportions; and that all bodies are composed of ultimate atoms, their weight differing in different bodies. The relation in weight among the molecules of bodies constitutes the basis of the atomic theory, which establishes the important fact that bodies do not combine at random, but in definite proportions by weight. Thus, admitting the principle that all atomic weights are multiples by whole numbers of the atomic weight of hydrogen, it follows that all atomic weights whatever will be expressed in whole numbers; the number for hydrogen being 1. Professor Graham, in his "Elements of Chemistry," presents a tabular view of the different elementary bodies, with the symbols by which they are indicated. In this table the Chemical Symbols and Equivalents are modes of expressing by letters and figures the definite proportions in which the substances chemically combine with one another, as elucidated in the annexed table. Thus hydrogen is represented by H 1; Oxygen by O 8; and water by H O. Iodine being denoted by I, and Fluorine by F, the symbols H I and H F denote hydriodic and hydrofluoric acid respectively. It happens, however, that many of the elementary bodies have names beginning with the same letter. In such cases the single letter is usually appropriated to one of them, and the others are denoted by that letter joined with some other letter of their names. Thus carbon is denoted by C. calcium by Ca, cobalt by Co, and chlorine by Cl. The names of the elements in the different languages of Europe not always beginning with the same letter, it has been agreed to form them from the Latin names of the elements; thus copper (cuprum) is represented by Cu, iron (ferrum) by Fe, tin (stannum) by Sn, &c. The great advantage of these symbols is, that they enable us to represent chemical decompositions in the form of equations. Thus, for the action of zinc on hydrochloric acid, we have—

H Cl + Zn = Zn Cl + H,

which means that hydrochloric acid and zinc, when placed in contact, produce chloride of zinc and free hydrogen. The left-hand side of the equation represents the state of things before the action, and the right-hand side shows the change produced. The annexed table contains an alphabetical list of the elementary bodies at present known, together with their symbols and their equivalents; hydrogen being taken as unity. The words in parentheses are the Latin names of certain elements, as previously explained:—

| ELEMENTS. | SYMBOLS. | EQUIV. |
|---|---|---|
| Aluminium | Al | 13·70 |
| Antimony (Stibium) | Sb | 64·60 |
| Arsenic | As | 37.70 |
| Barium | Ba | 68·70 |
| Bismuth | Bi | 71·00 |
| Boron | B | 10·90 |
| Bromine | Br | 78·40 |
| Cadmium | Cd | 55·80 |
| Calcium | Ca | 20·50 |
| Carbon | C | 6·12 |
| Cerium | Ce | 46·00 |
| Chlorine | Cl | 35·42 |
| Chromium | Cr | 28·00 |
| Cobalt | Co | 29·50 |
| Columbium [Tantalum] | Ta | 185·00 |
| Copper (Cuprum) | Cu | 31·60 |
| Fluorine | F | 18·68 |
| Glucinium | G | 26·50 |
| Gold (Aurum) | Au | 199·20 |
| Hydrogen | H | 1·00 |
| Iodine | I | 126·30 |
| Iridium | Ir | 98·30 |
| Iron (Ferrum) | Fe | 28·00 |
| Lead (Plumbum) | Pb | 103·60 |
| Lithium | L | 6·00 |
| Magnesium | Mg | 12·70 |
| Manganese | Mn | 27·70 |
| Mercury (Hydrargyrum) | Hg | 202·00 |
| Molybdenum | Mo | 47·70 |
| Nickel | Ni | 29·50 |
| Nitrogen | N | 14·15 |
| Osmium | Os | 99·70 |
| Oxygen | O | 8·00 |
| Palladium | Pd | 53·30 |
| Phosphorus | P | 15·70 |
| Platinum | Pl | 98·80 |
| Potassium (Kalium) | K | 39·15 |
| Rhodium | R | 52·20 |
| Selenium | Se | 39·60 |
| Silicium | Si | 22·50 |
| Silver (Argentum) | Ag | 108·00 |
| Sodium (Natrium) | Na | 23·30 |
| Strontium | Sr | 43·80 |
| Sulphur | S | 16·10 |
| Tellurium | Te | 64·20 |
| Thorium | Th | 59·60 |
| Tin (Stannum) | Sn | 57·90 |
| Titanium | Ti | 24·30 |
| Tungsten (Wolfram) | W | 99·70 |
| Vanadium | V | 68·50 |
| Uranium | U | 217·00 |
| Yttrium | Y | 32·20 |
| Zinc | Zu | 32·30 |
| Zirconium | Zr | 33·70 |

Any of the symbols in the table express one atom; when two or more are expressed, it is 2B or B2, that is, two atoms of boron. Fe + O, or FeO, is one equivalent of iron united to one of oxygen; and 2Fe + 3O, or Fe2O3, the combinations of two atoms of iron and three of oxygen.

ATONIC. In pathology, wanting energy.

ATRABILARIAN. In pathology, a term applied to hypochondriasis, or melancholy, arising from superabundance of bile.

ATROPHY. A wasting away.

ATROPIA. A poisonous vegetable alkali obtained from the Atropa belladonna, or deadly nightshade.

ATHENÆUM or ATHENEUM. In antiquity, a public building erected for rehearsals and lectures, the chief of which was at Athens; a gymnasium. In present use, a public establishment for the encouragement of literature and the sciences; in London, a famous club house, the members of which are all more or less literary or scientific men.

ATHLETÆ. The wrestlers, boxers, &c., who contended for the prizes at the Olympic, Pythian, and other games of ancient Greece and Rome.

ATLAS. A collection of maps in a volume; a kind of large-sized paper; a rich kind of silk, satin, or stuff, manufactured in the East. In anatomy, the first vertebra of the neck. In mythology, one of the Titans, king of Mauritania, and father of the Hesperides or Atlantides. Having assisted the giants in their war against the gods, he was condemned by Jupiter to bear the vault of heaven. In geography, a high mountain of Africa. In archæology, a column, or half figure of a man, supporting an entablature.

ATMOLOGY. The doctrine of the relations of heat and moisture.

ATMOMETER. An instrument to measure the quantity of exhalation from a humid surface in a given time.

ATMOSPHERE. The sphere or mass of air surrounding the earth, from 40 to 50 miles high.

ATMOSPHERIC PRESSURE. The weight of the atmosphere on a surface; the mean being 14·7 lbs. to the square inch.

ATMOSPHERIC TIDES. Certain changes which take place in the atmosphere, caused by the attraction of the sun or moon, when in opposition or conjunction.

ATOM. In natural philosophy, a particle of matter which can no longer be diminished in size; the smallest particle of which we can conceive any natural substance composed.

AUGEAN STABLE. In Grecian mythology, a stable belonging to Augeus, king of Ellis, in which he kept a great number of oxen; having never been cleaned, it was regarded as almost an impossibility to clean it, till it was assigned to Hercules as one of his labors: hence what is impracticable or what would be very difficult to clean.

AUGITE. A mineral of a brown or dark-green color, a constituent of volcanic rocks. It consists of silica, protoxide of iron and manganese, lime, magnesia, and alumina.

ATTRACTION. In a general sense, the power or principle by which bodies mutually tend towards each other, which varies according to the nature of the bodies attracted, and the circumstances under which this attraction takes place; whence attraction is distinguished into the Attraction of Cohesion, Attraction of Gravitation, Attraction of Electricity, Attraction of Magnetism, and Chymical Attraction.

The ATTRACTION OF COHESION is that by which the minute particles of bodies are held together.

ATTRACTION OF GRAVITATION is the principle by which bodies at a distance tend to each other; on this principle it is the two leaden balls, having each a smooth surface, if compressed strongly together will cohere almost as strongly as if united by fusion; and even two plates of glass if the surfaces are dry and even, will cohere so as to require a certain force to separate them; which is supposed to be a universal principle in nature. By gravitation a stone and all heavy bodies, if let fall from a height, are supposed to drop to the earth. All celestial bodies are supposed to have not only an attraction or gravitation towards their proper centres, but that they mutually attract each other within their sphere. The planets tend towards the sun and towards each other, as the sun does towards them The satellites of Jupiter tend towards Jupiter, as Jupiter does towards his satellites, and the same with the satellites of Saturn and of Uranus. The earth and moon tend likewise reciprocally towards each. By this same principle of gravity heavenly bodies are kept in their orbits, and terrestrial bodies tend, as is supposed, towards the centre of the earth. From this attraction all the motion, and consequently all the changes in the universe, are supposed to arise, the rains fall, rivers glide, ocean swells, projectiles are directed, and the air presses upon different bodies.

ATTRACTION OF MAGNETISM is the particular tendency of certain bodies to each other, as that of the magnet, which attracts iron to itself. This is only a sort of attraction of gravitation, acting on particular substances

ATTRACTION OF ELECTRICITY is the principle by which bodies, when excited by friction, tend towards each other. This species of attraction agrees with that of gravitation in the property of acting upon bodies at a distance; but it differs from it inasmuch as these bodies require to be in a particular state in order to be acted upon

CHEMICAL ATTRACTION is that disposition which some bodies in solution indicate to unite with some substances in preference to others. This is otherwise called affinity and is considered as a sort of attraction of cohesion, acting in an unresisting medium, as it applies peculiarly to such bodies as, in solution, indicate a disposition to unite with some substances in preference to others

ATTRIBUTES. These properties or per

sections which are attributed to the Divine Being only, as his self-existence, immutability, eternity, &c

ATTRIBUTES (in Logic). The predicates of any subject, or that which may be affirmed or denied of a thing, as 'man is an animal,' 'man is not a brute.'

ATTRIBUTES (in Painting and Sculpture) Symbols added to certain figures, to denote their office or character, as the eagle added to the figure of Jupiter, to denote his power, a club to Hercules, to denote his prowess &c.

AVALANCHES. A name given in Savoy and Switzerland to the masses of snow, which break off from the mountains with a noise like thunder, and sometimes overwhelm whole villages.

AVAST. A term of command at sea, signifying, hold, stop, stay.

AUCTION. A public sale of goods by persons called auctioneers, who are licensed to dispose of goods to the highest bidder on certain conditions, called the conditions of sale. A mock auction is that which is conducted by unlicensed persons for fraudulent purposes.

AUDIENCE. The ceremony of admitting ambassadors and public ministers to a hearing at court.

AUDIENCE COURT (In Law) An ecclesiastical court appertaining to the archbishop of Canterbury.

AUDIT. A regular examination of accounts by persons duly appointed.

AURA. A vapor of exhalation, defined by the early chemists as a pure essence exuding from animals and plants, and perceptible only by its odor.—Aura electrica is a term used in electricity, and applied to the sensation experienced, as if a cold wind were blowing on the part exposed to electricity when received from a sharp point. In pathology, aura epileptica is the peculiar sensation felt immediately before an attack of epilepsy.

AVERAGE (in Commerce). The damage which a vessel, with the goods or loading, sustains from the time of its departure to its return; also the charges or contribution towards defraying such damages, and the quota or proportion which each merchant or proprietor is adjudged, upon a reasonable estimate, to contribute to a common average.

AVES. Birds; the second class of animals in the Linnæan system. This class of animals is distinguished from all others by several peculiarities in their form, having feathers for their covering, two feet, and two wings formed for flight. They have, for the most part, the mandible protracted and naked, but are without external ears, lips, teeth, scrotum, womb, urinary vessel or bladder, epiglotis, corpus callosum, or its fornix and diaphragm. They are divided in the Linnæan system into six orders: namely, Accipitres, or the falcon and eagle kind; Picæ, the pies; Anseres, the goose and duck kind; Grallæ, the crane kind Gallinæ, the poultry or domestic fowl; and Passeres, the sparrow and finch kind, with all the smaller birds.

AUGER. A wimble, or tool for boring.

AUGMENT (in Grammar). A letter or syllable added or changed in Greek verbs

AUGMENTATION (in Heraldry). A particular mark of honour borne in an escutcheon, as the hand in the arms of baronets.

AUGURY. The practice of divining by the flight of birds or from inspecting their entrails. The augurs were a principal order of priests among the Romans.

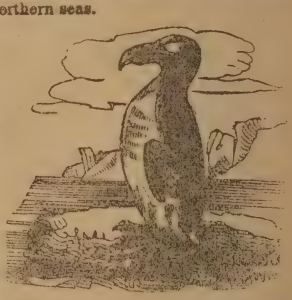
AUGUST. The eighth month of the year, called after the emperor Augustus Cæsar, who entered his second consulship in that month, after the Actian victory.

AUGUSTAN CONFESSION. A confession or declaration of Christian faith made by the Protestants at Augusta or Augsburg in Germany, A. D. 1550.

AUGUSTINES, or Austin Friars. A religious order, so called from St. Augustin their founder. They were very numerous in England before the Reformation.

AVIARY. A place set apart for feeding and propagating birds.

AUK. A bird, otherwise called Penguin or Razorbill, an inhabitant of the arctic or northern seas.



AURELIA. In entomology, the first metamorphosis of the maggot of an insect, or that state in which it is transformed from the caterpillar to the perfect winged fly; a chrysalis.

AURICLE. That part of the ear which is prominent from the head. The auricles of the heart are appendages at the base of the heart, which are distinguished into right and left, the former of which is pla

ced in the anterior, the latter in the hinder part. These are muscular bags, which move regularly with the heart, but in an inverted order.

AURICULAR CONFESSION. A mode of confession among Roman Catholics, by whispering in the ears of their fathers, confessors, or priests.

AURORA BOREALIS, i. e. the NORTHERN TWILIGHT. An extraordinary meteor or luminous appearance visible in the night time in the northern parts of the heavens. The aurora borealis appears frequently in the form of an arch, chiefly in the spring and autumn, after a dry year. This kind of meteor is more rarely to be seen, the nearer we approach the equator, but in the polar regions it is very constant and brilliant. In the Shetland Isles these lights are called 'the merry dancers.'

AURUM MUSICUM, or MOSAICUM. A combination of tin and sulphur, used by statuaries and painters, for giving a gold colour to their figures.

AUSPICES. A kind of soothsaying among the Romans, by the flight or singing of birds.

AUTO DA FE, or AN ACT OF FAITH. The solemn act of punishing heretics, formerly in use among the Spaniards. Upon a Sunday or festival, the offender being brought from prison to church, dressed in a frightful manner, attended divine service, after which he was delivered over to the civil power to be burnt.

AUTOGRAPH. An epithet applied to whatever is written in a person's own hand writing, as an autograph letter, a letter of one's own writing.

AUTOMATON. A self-moving engine, more particularly the figure of any animal having the principle of motion within itself by means of wheels, springs, and weights; those in the figure of a man are called androides, as the mechanical chess-player, &c. (See ANDROIDES); those of animals are properly called automata. It is said that Archytas of Tarentum, 400 years before Christ, made a wooden pigeon that could fly; and that Archimedes made similar automata. Regiomontanus made a wooden eagle, that flew forth from the city, met the emperor, saluted him, and returned; also an iron fly, which flew out of his hand at a feast, and returned again, after flying about the room. Dr. Hooke made the model of a flying chariot, capable of supporting itself in the air. M. Vaucanson made a figure that played on the flute; also a duck capable of eating, drinking, and imitating exactly the voice of a natural one; and, what is still more surprising, the food it swallowed was evacuated in a digested state; also the wings, viscera, and bones were formed so as strongly to resemble those of a living duck. M. le Droz, of la Chaux de Fonds, presented a clock to the king of Spain which had, among other curiosities, a sheep that made a bleating noise, and a dog watching a basket, that snarled and barked when any one offered to take it away.

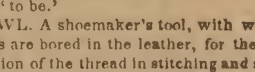
One of the most celebrated automata ever invented, was that of the Chess Player, constructed in Germany by Baron Kempelin, and since exhibited in various parts of Europe and America, by Mr. Maelzel. It represented the figure of a Turk, who made the moves on the chess-board with its hand, and played the game with so much skill that it was long thought never to have been beaten. It was however frequently beaten in America, and is now generally supposed to have concealed a person of small size within the engine, which directed the moves. The ingenuity of this contrivance, therefore, lay rather in the mode of concealing the real player, than in the mechanism

AUTUMN. The third season in the year which begins, in the northern hemisphere on the day when the sun enters Libra, that is, on the 22d of September. It terminates about the same day in December when the winter commences.

AUTUMNAL SIGNS. The three signs Libra, Scorpio, and Sagittarius, through which the sun passes during the autumn season.

AUXILIARY VERBS (in Grammar). Such verbs as help to form or conjugate others, as, in English, the verbs 'to have and 'to be.'

AWL. A shoemaker's tool, with which holes are bored in the leather, for the admission of the thread in stitching and sewing. The blade of the awl is mostly a little flattened and bent



AWNING. A piece of tarpaulin or sail, &c. hung about the decks or any other part of a vessel, to screen persons from the sun and rain.

AURANTIACEÆ. A natural order of thalamiflorous exogens, consisting of trees and shrubs of great utility and beauty. The flowers are fragrant, and the fruit juicy. The order comprehends the orange, lemon, shaddock, and lime, which have been divided into fourteen genera.

AXAYACATL. A Mexican fly whose eggs are used as a sort of caviare.

AXESTONE. A light green mineral, also called jade, or nephrite, found chiefly in New Zealand and the South Sea Islands, where it is used by the rude natives for making axes and other instruments.

AXINITE. A mineral of a brown, grey, black, or blue color, with axe-shaped crystals, and consisting of silica, alumina, lime, oxide of iron, and oxide of manganese.

AXIS. A straight line, either real or imaginary, passing through the centre of a body on which it may be supposed to revolve; a pivot on which anything turns.—In the sciences and the mechanical arts, the term is of very general application.—In astronomy, axis is an imaginary line supposed to pass through the centre of the earth and the heavenly bodies, about which they perform their diurnal revolutions. In geometry, it is the straight line in a plane figure, about which it revolves to produce or generate a solid. In mechanics, the axis of a balance is the line about which it moves, or rather turns about; the axis of oscillation is a right line, parallel to the horizon, passing through the centre, about which a pendulum vibrates; the wheel and axis is one of the mechanical powers, consisting of a wheel concentric with the base of a cylinder, and movable together with it about its axis. In architecture spiral axis is the axis of a twisted column drawn spirally, in order to trace the circumvolutions without; the axis of the Ionic capital is a line passing perpendicularly through the middle of the eye of the volute. In optics, an axis is that particular ray of light, coming from any object, which falls perpendicularly on the eye. In anatomy, the axis is the second vertebra of the neck; it has a process, or tooth, which goes into the first vertebra, and this by some is called the axis. In botany, the axis is a taper column, placed in the centre of some flowers or catkins, round which the other parts are disposed; or it signifies the stem round which the leaves, or modified leaves, are produced. Axal is an epithet relating to the axis; thus axal section is a section through any body, whatever shape it may be.

AXINOMANCY. In antiquity, a species of divination performed by means of an axe or hatchet which was fixed on a round stake, so as to be poised, and then the names of those suspected being repeated, he at whose name the axe fell was pronounced guilty.

AXLE, or AXLE-TREE. A piece of timber, or bar of iron, which passes through the centre of a wheel, and on which it revolves.

AXOLOTL. A water lizard found in Mexico.

AXOTOMOUS. In mineralogy, having a cleavage with a single face, perpendicular to the axis.

AXMINSTER CARPET. In the arts, a term applied to carpets manufactured in imitation of Turkey carpets, and noted for their thick and soft pile; they are woven in one piece.

AYAH. The name given in India to a native nurse or waiting maid.

AYE-AYE. A nocturnal quadruped of Madagascar, about the size of a hare, and thus named from its peculiar cry. It is the Cheiromys of naturalists.

AYMESTRY LIMESTONE. In geology, one of the calcareous beds of the Upper Silurian series, which has been produced by coral and shell accumulations amidst the masses of argillaceous sediments. It occurs near Ludlow, Malvern, and some localities in Wales.

AZALEA. A genus of beautiful shrubby plants, having richly-colored trumpet or bell-shaped flowers, and, in some species, highly fragrant.

AZETEC. One of the Azetecs, an early race of Mexico, inhabiting its great plateaux at the time of the Spanish invasion, and far advanced in arts and civilization.

AZIMUTH. In astronomy, an arch of the horizon intercepted between the meridian of the place and the azimuth.

AZOIC. In natural philosophy, a term applied to objects entirely destitute of organic life.

AZOTE. In chemistry, a kind of gas which is fatal to animal life; a name for nitrogen gas. Though destructive to animal life it is one of the constituents of the atmosphere, of blood, muscular fibre, and many minerals. The name, nitrogen, is given to it from its being the base of nitre. The following are some of its compounds: Azobenzide, consisting of 12 equivalents of carbon, 5 of hydrogen, and 1 of nitrogen; Azobenzoide, 42 of carbon, 16½ of hydrogen, and 2½ of nitrogen; Azobenzule, 42 of carbon, 15 of hydrogen, and 2 of nitrogen. Azotite is a salt formed of nitrous oxide, &c.

AZURITE, or AZURE STONE. In mineralogy, a fine azure blue, the lazulite or lapis lazuli of the lapidaries; structure, finely granulated; sp. gr. 3·0; hardness, 5—6; its constituent parts are phosphoric acid, alumina, magnesia, lime, oxide of iron, silica, and water.

AZYGOS. In anatomy, a term applied to various muscles, bones, and veins, which occur singly, and not in pairs.

AZYMOUS. A term applied to unleavened or unfermented dough.

# B

B, the second letter of the alphabet, is often used as an abbreviation for Bachelor, as B. A. Bachelor of Arts, B. D. Bachelor of Divinity &c. B as a numeral among the Romans stood for 300, and with a dash over it thus, $\bar{B}$, for 3000. B, in chronology, stands for one of the Dominical letters, and in music for the seventh note in the gamut.

BAAL. A god of the Phœnicians and Canaanites, which is supposed to represent the sun, and to be the same as the Bel or Belus of the Greeks.

BABOON. A large kind of ape with a short tail, which forms one division of the genus Simia in the Linnæan system

BACCHANALIANS. Those who performed the rites at the Bacchanals in honour of Bacchus.

BACCHANALS. A festival at Rome in honour of Bacchus, which, for their licentiousness, were suppressed by a solemn decree of the senate.

BACCHUS. The god of wine in the heathen mythology, was the son of Jupiter and Semele. He was the Osiris of the Egyptians, from whom the fables respecting him were taken by the Greeks.

BACCIFERÆ. Berry-bearing plants.

BACHELOR. One of the first degrees in the liberal arts conferred at the universities of Oxford and Cambridge.

BACKGAMMON. A particular game played by two persons with the help of dice, on a board or table divided into parts, whereon are twenty-four black and white spaces called points.

BACKPAINTING. The method of painting mezzotinto prints pasted on glass, with oil colours.

BACKSTAFF. An instrument formerly used in taking the sun's altitude. It was so called because the back of the observer is turned towards the sun when he makes the observation. This quadrant is now superseded by more accurate instruments.

BADGE. An exterior ornament of a coat of arms, originally worn by the retainers or attendants of the nobility. It fell into disuse in the reign of Queen Elizabeth.

BADGER. An animal ranked by Linnæus under the Bear tribe, which lives in holes by the sides of rivers, or in the clefts of rocks. It feeds on insects or berries burrows during winter, hunts by night, and lies concealed by day

BAG (in Commerce). A determinate quantity of goods contained in a bag, varying in size, according to the article or the place, from three to four hundred weight.

BAGNIO. Italian for a bathing house, with conveniences for bathing, sweating, and otherwise cleansing the body.

BAGPIPE. A favourite wind instrument among the Highlanders. It consists of two parts; namely, a leathern bag, and pipes for admitting and ejecting the air. One of the pipes called the drone, with which the base part is played, never varies its tone The third pipe is played on by compressing the bag under the arm.

BAIL (in Law). Sureties given for the appearance, when required, of a person in custody. Common Bail is in common concernment, where any sureties may be taken; but Special Bail is in matters of greater importance, where special surety of two or more persons must be taken according to the value of the cause.

BAILEE (in Law). The person to whom the goods of the one that is bailed are delivered.

BAILIFF. A subordinate magistrate or officer appointed within a particular province or district, as bailiffs of hundreds, liberties, courts baron, &c. Sheriffs' bailiffs are officers appointed by the sheriff to execute writs. These, being bound in bond to the sheriff for the due execution of their

offices are called bound bailiffs, vulgarly bum-bailiffs.

BAILIWICK. The hundred or any other district wherein a bailiff has a jurisdiction.

BAILMENT. The delivery of goods in trust upon a contract expressed or implied

BALÆNA. The whale ; a genus of the class Mammalia, and of the order Ceti.

BALANCE. One of the simple powers in mechanics which serves to find out the equality or difference of weight in heavy bodies. It is a peculiar application of the lever to this particular purpose. The common balance consists of a lever with equal arms, at the extremity of each of which is attached a scale. Before loading it with any weights, the whole ought to preserve a perfect equilibrium ; and this equilibrium must arise from an exact distribution of the weight of each arm and scale of the balance, as well as from the equal length of the former ; for on this depends the correctness of its action. The Assay-Balance is a very delicate kind of balance, used for determining the exact weight of minute bodies. It is so called because it is particularly used in the different processes of assaying ; it is also frequently used in chymical analysis. Balances also vary in their form, as the Bent-Lever Balance, the Compound Balance, consisting of a combination of balances used in weighing very heavy bodies ; also the Danish Balance, a kind of steel-yard.

BALANCE OF TRADE. A term in commerce, denoting the equality between the value of the commodities bought of foreigners, and the value of the native productions transported into other countries. Balance in a merchant's account is when the debtor and creditor account are made even

BALE (in Commerce). A quantity of merchandise packed up in cloth. A bale of cotton yarn is from three to four hundred weight ; of raw silk, from one to four hundred.

BALISTER, or File-Fish. A fish so called from the resemblance of its backbone to a file. It is remarkable for the brilliancy of its colours.

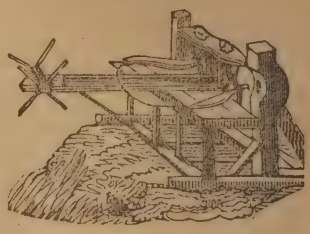
BALL AND SOCKET. An instrument of brass with a perpetual screw, constructed to move in any direction It is used in the management of surveying, and astronomical instruments.

BALLAST. Gravel, sand, or any weighty matter, put into a ship's hold, to poise her and bring her sufficiently low in the water.

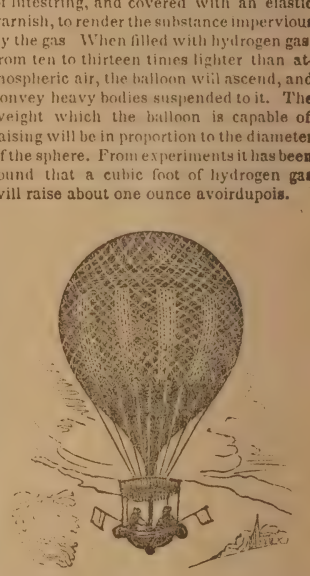
BALLET. A theatrical representation, consisting of music and dancing.

BALLET-MASTER. The artist who regulates the performance and representation of the ballet.

BALLISTA. A warlike engine used by the ancients in besieging cities, to throw large stones, darts, and javelins.



BALLOON. A globe commonly made of lutestring, and covered with an elastic varnish, to render the substance impervious by the gas When filled with hydrogen gas from ten to thirteen times lighter than atmospheric air, the balloon will ascend, and convey heavy bodies suspended to it. The weight which the balloon is capable of raising will be in proportion to the diameter of the sphere. From experiments it has been found that a cubic foot of hydrogen gas will raise about one ounce avoirdupois.



BALLOT. A little ball ; also the manner of giving votes at an election by putting little balls, black or white, into a box.

BALLUSTRADE. A series or row of ballusters or small pillars, serving as a guard or fence to balconies or staircases.

BALM, or BALSAM. A liquid resin of a whitish or yellow colour, a fragrant smell and a penetrating aromatic taste. It flows from the balsam tree, and is much used by the females in Turkey as a cosmetic.

BALM, or BALM MINT. A perennia , so called from the fragrance of its smell, which resembles that of balsam.

BALSAM TREE. A tree growing in Arabia and Egypt, the bark of which yields the balm or balsam abovementioned.

BALSAMICS. Softening, healing, and cleansing medicines.

BAMBOO, or BAMBU. An Indian reed with larger knots than the common reed. The poorer inhabitants of India make their dwellings of this reed : paper is also made of the same material, by bruising it and steeping it in water until it be reduced to a paste.

BANANA. See PLANTAIN TREE.

BAND (in Architecture). Any flat, low member or moulding, which is broad but not deep.

BANDANA HANDKERCHIEFS. A kind of silk handkerchiefs manufactured, in India, of silk and cotton

BANDEROLL A sea term for a little flag in form of a gridiron, that used to be hung on the masts of vessels.

BAND OF PENSIONERS. A particular company of gentlemen bearing halberds, and attending upon the person of the king upon solemn occasions.

BANDITTI. A band of outlawed robbers, most frequent in Italy

BANDOLEER, or BANDOLIER. A large leathern belt, formerly worn over the right shoulder, and hanging under the left arm, to carry some warlike weapon.

BANDROL. A little flag or streamer.

BANDS. Two pieces of iron nailed upon the bows of the saddle, to hold them tight.

BANERET. A knight made in the field, whose standard was converted into a banner which he could display in the king's army as the barons did.

BANIAN TREE See INDIAN FIG

BANISHMENT. A quitting the realm, either voluntarily, as by abjuration ; or compulsorily, as by transportation.

BANK (in Commerce). An establishment for the receiving of moneys and letting them out on interest. Banks are generally formed by a number of moneyed persons, who, for carrying on the business of negotiating bills of exchange, and dealing in bullion, &c. advance a considerable sum as a joint capital. The first bank was established at Venice about 1157, and the name of Banco was given to it in Italian, from the bench which the money-changers or bankers used to sit upon in their courses or exchanges. The bank of Genoa was established in 1345; that of Amsterdam, in 609 ; that of Hamburg, in 1619 ; that of Rotterdam, in 1635 The Bank of England one of the last, but at present the greatest of its kind, was established by charter in the reign of William and Mary, into a corporate body, by the title of the Governor and Company of the Bank of England. Its notes form the currency of the kingdom to a certain extent, and amount to between twenty and thirty millions. The Bank of England is also the Government Bank, and pays the interest of the national debt.

BANKER. A person who traffics in money, by receiving the current cash of individuals free of interest, and negotiating with it, either in the discount of bills or the advance of money on sufficient securities.

BANKING-HOUSE. Any mercantile house which carries on the business of a private banker, as distinguished from the Bank, by which is understood the Bank of England.

BANKRUPT. A trader who fails or breaks, so as to be unable to carry on his business or pay his debts. In Law, a bankrupt is one who has committed an act of bankruptcy, so as to bring him under the protection of the bankrupt laws, which is allowed to none but actual traders, or such as buy and sell, and gain a livelihood by so doing. It is derived from bancum, a bench, and rumpere, to break, because the bench of the Italian banker or money changer is said to have been broken by way of infamy when he failed.

BANNER. A flag or standard at the end of a lance.

BANNIANS. A religious sect among the Hindoos, who believe in the transmigration of souls, and therefore abstain from eating the flesh of animals, which they carefully preserve. They are so cautious of having communication with any but their own caste, that if any of another nation or tribe has drunk out of or touched their cup, they break it.

BANNOCK. A sort of oaten cake in the north of England, baked in the embers or on a hot stone.

BANNS OF MATRIMONY. The publishing of marriage contracts in the church before the performance of the marriage ceremony. By the ordinances of the church, when persons are to be married, the banns of matrimony shall be published in the church where they dwell three several Sundays or holydays in the time of Divine Service ; and if, at the day appointed for their marriage, any man do allege any impediment or precontract, consanguinity or affinity, want of parent's consent, infancy, &c. why they should

not be married (and become bound with sureties to prove this allegation), then the solemnization must be deferred until the truth is tried.

BANTAM The name of a domestic fowl of the hen tribe, having short legs, and the shanks well feathered

BAPTISM. A sacrament of the Christian church, administered either by immersion, that is, dipping in water, or by sprinkling with water.

BAPTISTS. A denomination of professing Christians, who practice adult baptism instead of that of children, and by immersion rather than by sprinkling.

BAR (in Courts of Law). The place parted off by a bar or railing, within which counsellors stand to plead; also the profession of a barrister or pleader.

BAR. A sea term for a rock lying before the harbour in such a manner that ships cannot sail over except upon the flood.

BAR (in Music). A line which divides the notes into equal portions in respect to their duration.

BAR (in Heraldry). One of the honourable ordinaries, consisting of two horizontal lines drawn across the escutcheon.

BARALIPTON. An arbitrary name among logicians for an indirect mode of the first figure of syllogisms

BARATRY (in Commerce). A term used when the master of a vessel or the mariners cheat the owners by embezzling their goods, or running away with the ship.

BARB. The points hat stand back in the head of an arrow or fishing-hook, to prevent them from being drawn out easily, also the name of a horse of the Barbary breed, remarkable for its swiftness.

BARBARA. An arbitrary name among logicians for the first mode of the first figure of syllogisms, consisting of three universal propositions: as, 'all animals are endued with sense; all men are animals; ergo, all men are endued with sense.'

BARBARISM. A rude kind of language used only by the savage or unlettered person.

BARBEL A fish of the carp kind, which lies in holes near the banks, and feeds on testaceous animals, worms, &c. It has its name from the beards or wattles under its nose.

BARBER One who follows the trade of shaving and dressing hair, and anciently also that of bleeding, whence barbers were called Barber-Chirurgeons, and used a pole as a sign to represent the staff which persons used to hold when they were bled. The barbers were separated from the surgeons by a statute in the reign of George the Second.

BARBERRY. A tart berry, the fruit of the barberry tree; a prickly shrub.

BARBICAN. An outer defence or fortification to a city or castle, used as a fence, and also as a watchtower, to descry the approach of an enemy

BARD. A sort of poets among the Gauls, who used to set forth the deeds of heroes and great men.

BARGAIN AND SALE (in Law) An instrument whereby the property of lands and tenements is, for valuable consideration, transferred from one person to another. It is called a real contract upon a valuable consideration for passing of lands, tenements, and hereditaments, by deed indented and enrolled.

BARGE. A very large boat used on rivers either for pleasure and state, as the royal barge; or for trade, as the coal barge, &c.

BARILLA. A kind of Spanish alkaline salt used in the glass trade

BARITONO. A low pitch of the voice between bass and tenor.

BARIUM. A metal so called by Sir H. Davy the discoverer, which is obtained by the chymical decomposition of barytes

BARK. The skin or covering of a ligneous plant. Bark-binding is a disease in trees cured by slitting the bark.

BARK (in Commerce). A stuff manufactured in India of the bark of trees; also the Peruvian or Jesuit's bark, which is procured from the Cinchona tree growing in Quito.

BARK. A sea term for a small vessel, particularly one carrying three masts.

BARKING. The process of peeling the bark off the trees, which must be done in the month of May.

BARLEY. A sort of corn or grain which is sown in March, April, or May, and succeeds best in light dry soils. From barley, when converted into malt, beer is made.

BARLEY, or PEARL-BARLEY. Barley stripped of its first coat, and used in making a diet drink.

BARLEYCORN. The least of our long measures, being the third of an inch.

BARLEY-MOW. The place where reaped barley is laid up.

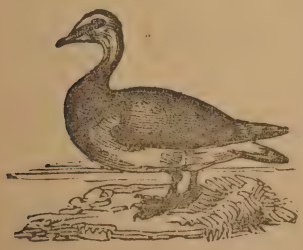
BARLEY WATER. A decoction of pearl-barley.

BARM, or YEAST. The head or working out of beer, which is used as a ferment to lighten bread.

BARN. A storehouse for grain in which it is deposited and threshed.

BARNACLE. A species of shell-fish which sticks to the bottom of ships, rocks, &c.

BARNACLE-GOOSE. A large water-fowl, with a broad flat bill



BAROLITE. A stone of the ponderous order, called also the carbonite of barytes.

BAROMETER. An instrument for measuring the weight of the atmosphere, invented by Torricelli. The common barometer is a glass tube hermetically sealed at one end, and filled with mercury so as to have no air over. Then the maker, putting his finger on the open end, immerses it in a bason of quicksilver or water; and on his removing his finger, the quicksilver in the tube endeavours, by its own weight, to descend into the bason, but by the pressure of the external air on the surface of the fluid in the bason, and no air being in the tube at the top, the quicksilver will rise from 28 to 31 inches in mercury, and from 30 to 33 inches in water. In dry weather, the air, being free from vapours, is consequently heavy, and presses up the quicksilver; but in moist rainy weather, the atmosphere being charged with clouds and fogs, the air is lighter, and presses with less force on the quicksilver. In high winds the atmosphere is light, and the quicksilver low; it also rises higher in cold weather than in warm.

BARON. In England, a degree of nobility next to a viscount. All barons are lords of parliament and peers of the realm Barons were originally so by tenure, that is, by virtue of the barony annexed to their lands or office

BARON AND FEME. A term in Law for husband and wife, who are deemed but one person.

BARON'S CORONET On a gold circle

six pearls, which were assigned to barons by King Charles II. after the Restoration

BARONET The lowest degree of hono

dittary honour created by letters patent. It was founded by James I. in 1604.

BARONS OF THE EXCHEQUER. In England the four judges who officiate in the court of exchequer at Westminster.

BARONY. In England, the honour and territory which gave title to a baron, including the fees and lands of lords, both temporal and spiritual.

BARRACKS. Places erected for the accommodation of both men and horses in the army.

BARRAS A substance consisting of resin and oil, which exudes from the wounds of fir trees in winter.

BARRATOR (in Law). A common mover of suits and quarrels, either in courts or elsewhere.

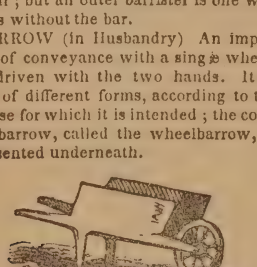
BARREL. A cask or vessel for holding liquor, that is, thirty-one and a half gallons of wine, &c. and thirty-two gallons of beer.

BARREL. The cylinder of a watch, about which the spring is wrapped.

BARRIER. A kind of fence, composed of great stakes, and serving to defend the entrance of a passage.

BARRISTER. In England a counsellor admitted to plead at the bar. An inner Barrister is one who is a serjeant, or king's counsel, and is admitted to plead within the bar; but an outer barrister is one who pleads without the bar.

BARROW (in Husbandry) An implement of conveyance with a single wheel, and driven with the two hands. It is made of different forms, according to the purpose for which it is intended; the common barrow, called the wheelbarrow, is represented underneath.



BARROW. A large hillock or mound, of which many are to be met with in different parts of England, and are supposed to be the tumuli or tombs of the Romans.

BARTER. The exchanging one commodity for another; also the rule in Arithmetic by which the proportionate value of commodities is found.

BARYTES. A sort of ponderous earth, very brittle, and perfectly soluble in boiling sulphuric acid. It is compounded of oxygen and barium.

BASALT. A sort of argillaceous earth, consisting of silica, with a certain portion of alumina and oxyde of iron, lime, and magnesia. It is always found near volcanoes.

BASE (in Architecture) The foot of a pillar, by which it is sustained; in Geometry, the base of a figure is the lowest plain side, or that on which it stands.

BASE (in Chymistry). The inert substance which combines with, and is acted upon, by the more volatile and active menstrua, as the alkalies, earths, and metallic oxydes, which are the principal ingredients in the formation of salts.

BASE LINE (in Perspective). The common section of a picture, and the geometrical plane.

BASEMENT. A continued base extended along any building, as the basement or lower story of a house.

BASE TENURE, or Base Estate (in Law). A holding by villanage, or other customary service.

BASHAW, or Pacha. The title given to the grand officers of the court at Constantinople; as the capudan bashaw, the admiral or commander at sea; bostangi bashaw, the chief officer of the garden, &c. Their degrees of dignity were marked by their bearing one, two, or three horses tails The ruler of Tripoli is called Bashaw.

BASIL. The sloping edge of a chisel, or of the iron of a plane.

BASIL. A plant which has an aromatic smell.

BASILICON. An ointment, consisting of resin, pitch, oil, wax, &c.

BASILISK. A serpent of the lizard tribe, with remarkably piercing eyes, and a white spot on its head, resembling a diamond. It was formerly called a cockatrice, and fabled to be produced from the eggs of a cock.

BASIN. Any hollow place capable of holding liquids. Basin of a dock, a place where the water is confined by double floodgates The basin of a haven is that part which opens from a narrow passage into a spacious receptacle. The basin of a river, includes the whole valley which empties its waters into the river or its branches.

BASKET. A vessel made either of rushes, splinters, willows, osiers, or any other flexible material that can be interwoven To render osiers fit for use, they must be soaked for some time. Those that are intended for the finer kind of work, as washing-baskets or market baskets, and the like, must be peeled while they are green, and then steeped. Hampers, and the coarser kind of work, do not require that preparation: basket making was one of the arts that was carried to a considerable

degree of perfection among the ancient Britons.

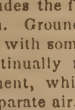
BASKING SHARK. A species of the shark, which lies much on the surface of the water, basking in the sun. It grows to a prodigious size, but is not very fierce.

BAS-RELIEF. See Basso Relievo.

BASS. A sort of cushion made of rush or straw.

BASS (in Music). The lowest or deepest part of any composition. This note is played on the largest pipes or strings of instruments of the common size, as the organ, lute, &c., or on the largest kind of instruments. The bass is the principal part of a musical composition, and the foundation of harmony, whence it is called the fundamental bass. Thorough bass is that which includes the fundamental rules of composition. Ground bass is that which commences with some subject of its own, that is continually repeated throughout the movement, whilst the upper parts pursue a separate air.

BASS CLIFF, or F Cliff. The character marked thus,



and placed at the beginning of a stave in which the bass or lower notes are placed.

BASSO RELIEVO. In English, bass-relief, a sort of sculpture in which the figures are represented, as projecting not far above the plane on which they are formed. Figures cut, are said to be done in relief, and when the work is low or flat it is called bass-relief, or basso relievo, in distinction from alto relievo, and mezzo relievo.

BASSOON. A musical wind instrument blown with a reed, and has eleven holes. It serves to play the bass part in concerts.

BASS VIOL. A stringed musical instrument of the same shape as a violin, but much larger.

BASS VOICE. The gravest and deepest of the male voices.

BASTARD (in Law). One born out of wedlock who cannot inherit.

BASTILE. A fortress in Paris, which was used as a prison, and destroyed during the French revolution.

BASTINADO. A mode of punishment usual among the Turks, of beating the offender on the soles of the feet.

BASTION. A large mass of earth, standing out from a rampart, of which it forms the principal part.

BAT. An animal resembling both a bird and a mouse. It has wings not of feathers, but of a skin distended, and flies only at night. It lays no eggs, but brings forth its young alive, and suckles them.

BATABLE GROUND. Land formerly so called, which lay between England and Scotland, and was the subject of debate to whom it belonged.

BATEMENT (in Carpentry). The wasting of stuff, in cutting it for the purpose designed.

BAT-FOWLING. A mode of catching birds at night, when they are at roost.

BATH. Any receptacle for water which is convenient for bathing; also any artificial contrivance which is to supply the place of a bath, as a shower bath, or an apparatus for applying water to the body in the form of a shower; a vapour bath, or a mode of conveying moisture to the body by means of steam; a medicinal bath is that in which certain chemical preparations are mingled.

BATH (in Chemistry). A contrivance by which heat is conveyed to any substance; also in the refining of metals, the fusion of the metallic matter is called a bath.

BATH, KNIGHTS OF THE. In England, a military order of knighthood, restored, if not instituted, by Henry IV These knights wear a red ribbon, and their motto is, Tria juncta in uno, alluding to the three cardinal virtues, faith, hope, and charity, which every knight ought to possess.

BATON. The staff or truncheon, given as a symbol of authority, to generals in the French army.

BATTA. Allowances made to troops in India. Dry batta is money given in lieu of rations; wet batta, what is given in kind

BATTALION. A body of foot soldiers of from 600 to 800 men.

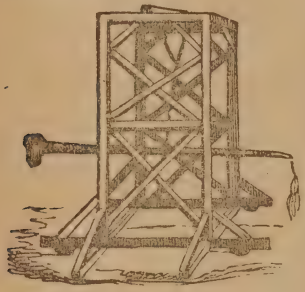
BATRACHIA. An order of animals, including frogs, toads, salamanders, and other reptiles having a naked body with two or four feet.

BATTEN. A scantling or piece of wooden stuff, from two to four inches broad, and one inch thick.

BATTERING. A cannonade of heavy ordnance against any fortress or works.

BATTERING-RAM. A military machine, with which the ancients effected

breaches in fortifications. These engines were variously constructed, and of different sizes. Plutarch informs us that Marc Antony, in the Parthian war, used a ram of 80 feet long; and, according to Vitruvius, they were sometimes 106, and even 120 feet long, and weighed 100,000 lbs. This engine was frequently used in the fourteenth century, and occasionally for other purposes besides that of war in later periods. Sir Christopher Wren is said to have employed it in demolishing the walls of the old church of St. Paul, previously to his rebuilding it.



BATTERY (in Law). The striking, beating, or offering any violence to the person of another, as by spitting in his face, or any way touching him in anger, or violently jostling against him. It is distinguished from an assault, inasmuch as the latter does not necessarily imply a hitting, or blow. There may be an assault without battery, but there cannot be a battery without an assault.

BATTERY (in Military Affairs). Any raised place on which cannon are placed. Batteries are of different kinds, as open batteries, which are exposed to view; masked batteries, which are hidden by a breastwork; cross batteries, two batteries firing athwart each other on the same object, &c. A floating battery is a battery erected on simple rafts, or the hulls of ships

BATTERY (in Electricity). A combination of coated surfaces of glass jars, so connected, that they may be charged at once, and discharged by a common conductor. A battery or pile, is also an apparatus employed for accumulating the electricity of galvanism.

BATTLEDORE. An instrument used either with a shuttlecock, or a tennis ball.

BATTLEMENTS. Notches or indentures in the top of a wall or building like embrasures, to look through.

BATTLE AXE. An ancient sort of weapon, having an axe and a point at the end, for cutting or thrusting

BATTON. A staff or truncheon, used by the English in coats of arms, to denote illegitimacy

BAWLING The noise of dogs in sporting, who are too busy before they find the scent.

BAY. Any inlet of the sea between two capes, or promontories, where ships may ride; it is defined in geography, an arm of the sea stretching inland.

BAY, or BAY TREE. The female laurel tree, an evergreen, which grows wild in Italy and France.

BAY. A colour in horses resembling the dried bay leaf.

BAYONET. A short triangular dagger made to fix on the muzzle of a firelock or musket.

BAY-SALT. A salt which is made from seawater in France, by letting the water into pits or basins, where, by the heat of the sun, it is evaporated, and the residue is converted into crystals of salt

BAZAAR. A place mostly covered, and fitted up with shops in Eastern countries.

BAZA, or BAZAT. Jerusalem cotton, a fine-spun cotton, grown in Palestine.

BDELLIUM. The gum of an Arabian tree about the size of an olive tree. The gum resembles wax, and consists of resin, gum, cerasin, and volatile oil.

BEACH. The seashore, or margin of the sea, which is washed by the tides;

BEACON. A signal by fire, placed on some eminence, to prevent shipwrecks, or give some alarm.

BEAD (in Architecture). A round moulding, carved in short embossments, like the bead of a necklace.

BEADLE, or BEDEL. In England an officer of a court, of the university, or of

any corporate body, who acts as a messenger and attends to keep order.

BEAD PROOF. A method of determining the strength of spirituous liquors, from the continuance of the bubbles or beads on the surface.

BEAD TREE. A shrub, the fruit of which is a nut, that is bored through, and strung as beads by the Roman Catholics in Spain and Portugal.

BEAGLE. A sort of hunting dog.

BEAK, or BEAK-HEAD OF A SHIP. That part of it, which is without before the forecastle, and serves by way of ornament. Among the ancients it was a piece of brass, like a bird's beak.

BEAM. The largest piece of wood in a building, which is its main support; in Naval Architecture, beams are the large main timbers that stretch across a ship to support a deck.

BEAM-COMPASS. An instrument consisting of a square wooden or brass beam, having sliding sockets, used for describing large circles.

BEAM-TREE. A tree which grows to the height of thirty or forty feet, so called, because it is particularly fitted for making axletrees and the like.

BEAN. An edible pulse, of which there are several sorts, as the kidney or French bean, the broad Windsor bean, the horse bean, &c.

BEAR. A wild beast, covered with shaggy hair, and having hooked claws for climbing trees. It feeds on honey, insects, and carcasses, and lies torpid during the winter. The black bear is a native of the north of Europe, Asia and America; but the polar bear, which is white, lives within the arctic circle. The brown bear is found in Europe, but not in America. Asia has several varieties of the bear. The grisly bear figured below, is found only near the Rocky mountains in the United States.

BEAR'S-BREECH An herb, from the smooth leaved sort of which, is extracted a mucilage.

BEARD (with Botanists). The under lip of a labiated flower, and in corn and grass, that hair or bristle which serves to defend the ear, as in barley, rye, wheat, and oats.

BEARD OF A COMET (in Astronomy). The rays which a comet emits towards that part of the heavens, to which its course seems to direct it.

BEARD OF A HORSE (in Farriery). The chuck, or that part under the lower jaw, on the outside, and above the chin, which bears the curb of the bridle.

BEAR-GARDEN. A place formerly set apart in England for the baiting of bears

BEARER OF A BILL (in Commerce) The person in whose hands the bill is, and in favour of whom the last indorsemen was made.

BEARERS. Posts or brick walls, which are trimmed up between two ends of a piece of timber, to shorten its bearing, or to prevent its bearing with the whole weight at the ends only.

BEARING (in Architecture). The distance between the bearer, or support, and each end of the timber.

BEARING. A sea term, to denote the situation of any distant object with regard to the ship's position, whether ahead, astern, or abreast, &c.

BEARING (in Heraldry). Whatever is borne in, or fills the escutcheon.

BEAT. The walk or round, which a watchman has to take at stated intervals.

BEATING TIME (in Music). That motion of the hand or foot, by which some person marks and regulates the movements of the performers.

BEATS (in a Clock or Watch). The strokes made by the pallets or fangs of the spindle.

BEAVER. An amphibious four footed animal, that lives on the banks of rivers and unfrequented lakes, and is remarkable

for its ingenuity in building its habitation. It walks slowly, swims dexterously, eats sitting on its haunches, and conveys its food to its mouth with its fore paws. This animal is valued both for its fur and for the oil which it yields, called castor oil.

BEAVER. That part of the helmet which defends the sight, and opens in front.

BEAU MONDE. The gay fashionable world.

BED (in Gunnery). A thick plank which lies under a piece of ordnance, on the carriage.

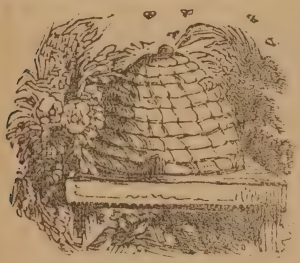
BED (in Masonry). A range or course of stones.

BED (in Mineralogy). A stratum or layer of any earth or stone

BED OF A RIVER. The bottom of a channel, in which the stream or current usually flows.

BEE. An insect which carries on the operation of making honey and wax. Bees begin to swarm, that is to form new colonies, in May or June, according to the state of the weather. The swarm consists of a female, called the queen, who is distinguished by her size; the drones, who are supposed to be males, that do not work; and the mules, or common bees, who are of neither sex, and do the work of the hive

BEEHIVE. A particular kind of box or basket in which bees are kept.



BEER. A drink made of malt and hops by the process of brewing; it is of three kinds, namely, strong beer, ale, and table beer, or small beer.

BEESTINGS. A term in Husbandry for the first milk taken from a cow after she calves.

BEET. A garden herb and root, which is thick and fleshy. The leaves are used as potherbs, and the root is boiled for the table

BEETLE The scarabæus of Linnæus well known insect, produced from the larvæ or grubs that live under ground. It has six feet, is hairy at one end, and lives in dry decayed wood, &c.

BEETLE. A large wooden hammer for driving palisadoes.

BELFRY. That part of a church steeple in which the bells are hung.

BELL. The well known metallic machine, which is ranked among musical instruments; it consists of three parts, the body, or barrel, the clapper, and the ear, or cannon. The use of bells in churches was introduced into England, in the eighth century. They were commonly baptized before they were hung

BELLES LETTRES. A French term for polite literature.

BELLIGERENT. An epithet applied to states that are at war.

BELL METAL. A metal employed in the manufacture of bells, which usually consists of three parts of copper and one of tin.

BELLONA. The goddess of war, and sister of Mars.

BELLOWS. A machine for blowing the fire. This machine is so contrived as to expire and respire the air alternately, by enlarging and contracting its capacity The air which enters the bellows is compressed when they are closed, and flows out of the pipe with a velocity proportioned to the force by which it is compressed. The bellows of smiths and founders are worked by a rocker.

BELLOWS OF AN ORGAN. The pneumatic part of the machine, by which it is supplied with wind. The bellows of a large organ are worked by a man called the blower; those of smaller organs by the foot of the player.

BELLUÆ. The sixth order of animals in the Linnæan system, having their feet hoofed, as the equus, or horse; sus, the swine; the hippopotamus, and the tapir.

BELT. A girdle for hanging a sword or any other weapon in.

BELT (in Heraldry). A badge of the knightly order, given to a person when he was raised to the knighthood.

BELT (in Surgery). A bandage applied round the body.

BELT (in Masonry). A range or course of bricks projecting from the rest.

BELTEIN. An ancient festival in Ireland, celebrated on the 21st of June, the summer solstice, when fires were made on the tops of the hills.

BELTS, or FASCIÆ. Two zones or girdles round the planet Jupiter, more lucid than the other parts of his body, and terminated by parallel straight lines, sometimes broader and sometimes narrower, varying both in magnitude and position. These belts were first observed at Naples, by Zuppi and Bartoli, two Jesuits.

BENCH. A seat of justices, or judges, as the King's Bench, at Westminster, Eng.

BENCHER. In England, a lawyer of the oldest standing in the inns of court

BEND (in Heraldry). One of the ten honourable ordinaries, drawn from the dexter, or right corner, at the top of the escutcheon, to the sinister base, or left corner, at the bottom. It is supposed to represent a shoulder belt, or scarf, and to show the wearer to be valiant in war. It is sometimes called a bend dexter, to distinguish it from the bend sinister, which is drawn from the left side of the shield to the right.

BEND. A sea term for the knot, by which one rope is fastened to another or to an anchor.

BENDING. A sea term, for the tying two cables or ropes together, or to anything else

BENDING (in Physiology). The reducing a body to a curved or crooked form The bending of boards, planks, &c. is effected by means of heat, whether by boiling or otherwise, by which the fibres become relaxed and flexible.

BENDS IN A SHIP. The outermost timbers of the side, to set the foot on in climbing up the side. They are reckoned from the water, first, second, and third bend, and are of great service in strengthening the ship, as into them the beams, knees, and foothooks are bolted.

BENEFICE. In England, any ecclesiastical living, but particularly rectories and vicarages.

BENEFIT OF CLERGY. In England, a privilege in law, at first peculiar to the clergy, but in after times made common to the laity. When any one was convicted of certain crimes, he had a book given him to read, and if the ordinary or his deputy pronounced these words, 'Legit ut clericus, he reads like a clergyman, or scholar,' he was only burnt in the hand, and set free for the first offence, otherwise he was to suffer death.

BENZOIN A dry solid resin, of a fragrant smell, produced by incision from the styrax, an Indian tree. It is brought to us from the East Indies, particularly Siam and the islands of Java and Sumatra, in masses of various sizes, composed of small granules of a whitish or yellowish colour, with a purple cast on the surface. It is very inflammable, and diffuses a fragrant smell while burning, and so in like manner when rubbed in the hand. When the benzoin tree is six years old, the natives cut it in several places, in an oblique direction, and the benzoin flows from the wounds. Benzoin is used by perfumers in making sweet bags, &c. and was formerly very much esteemed as an expectorant. The tree was introduced from Virginia into England.

BEQUEST. A legacy; what is bequeathed or left by will.

BERENICE'S HAIR A constellation in the northern hemisphere

BERGAMOT. A fine sort of pear which is of two sorts, namely, the summer bergamot and the autumn bergamot

BERGAMOT (in Chemistry). A fragrant essence, extracted from a fruit which is produced by ingrafting a branch of a lemon tree, upon the stock of a bergamot pear This essence is got by cutting the external rind of the fruit into small pieces, and squeezing them into a glass vessel, in the same manner as the juice of a lemon is

squeezed out, by which means an ætherial oil is procured of a very fragrant smell.

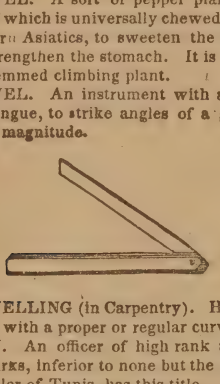
BERRY. A round fruit, for the most part soft, and covered with a thin skin, containing seeds in a pulpy substance.

BERYL. A precious stone, which, in its purity, is of a perfectly seagreen colour, and on that account called aqua marina. Beryl is also (in Painting) the seagreen colour, in imitation of this stone.

BETA. The second letter in the Greek alphabet.

BETEL. A sort of pepper plant, the leaf of which is universally chewed by the southern Asiatics, to sweeten the breath and strengthen the stomach. It is a slender-stemmed climbing plant.

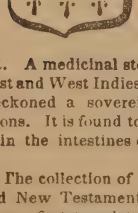
BEVEL. An instrument with a movable tongue, to strike angles of a greater or less magnitude.



BEVELLING (in Carpentry). Hewing timber with a proper or regular curve.

BEY. An officer of high rank among the Turks, inferior to none but the pacha. The ruler of Tunis, has this title.

BEZANTS. Round flat pieces of bullion without any impression, which are supposed to have been the current coin of Byzantium. This coin was probably introduced into coat armour by those who went to the wars.



BEZOAR. A medicinal stone, brought from the East and West Indies, which was formerly reckoned a sovereign antidote against poisons. It is found to be a morbid concretion in the intestines of some animals.

BIBLE. The collection of the books of the Old and New Testament. The Old Testament was first translated by the 72 interpreters, and thence called the Septuagint: of the Latin versions, that of St. Jerome was confirmed by the council of Trent for vulgar use, and thence got the name of the Vulgate. The Bible was translated into the Saxon tongue about the year 940; and into the English, by William Tindal, in the twenty-first year of the reign of Henry the Eighth, when it was printed. The present authorized English version of the Holy Scriptures was completed in the reign of James the First, about the year 1611.

BIBLIOGRAPHER. A person conversant with books.

BIBLIOGRAPHY. The knowledge of books as to their several editions, time, and form of being printed, type, and other particulars connected with their publication.

BIBLIOMANIA. A rage for scarce and old editions of books.

BICE (in Painting). A blue colour prepared from the lapis armenus; it bears the best body of all bright blues used in common work.

BIENNIALS. Plants that flourish for two years, and seldom more.

BIGAMY. Double marriage, or the marrying of two wives or two husbands while the first is alive, which is felony by statute. Bigamy, in the Civil Law, is the marrying a plurality of wives or husbands.

BIGHT. The double part of a rope where it is folded, in distinction from the end.

BILBOES. A term at sea, for the long bars of iron with which the feet of offenders are confined, the irons being more or less heavy, according to the nature of the offence.

BILE. A bitter fluid secreted in the glandular substance of the liver, and passing through the gall bladder and the porus biliarius, is discharged into the duodenum, where it converts the chyme into chyle and excrement. The constituent parts of bile are water, soda in a caustic state, phosphate of lime, and a resinous albuminous principle.

BILGE. A sea term, for the bottom of the floor of a ship, the compass or breadth of its bottom. A vessel is said to bilge when she has struck off some of her timber against a rock.

BILL. An edged tool, or hatchet, with a hooked point, for lopping of trees and making hedges: if it have a short handle it is a handbill; if a long handle, a hedging bill.

BILL (in Law). A declaration in writing expressing any grievance or wrong which one person has suffered from another; also an instrument drawn up by any member and presented to a legislature for its approbation or rejection.

BILL OF EXCHANGE (in Commerce). A note containing an order for the payment of a sum of money, to a person called the drawer, who when he has signed it with his name, and written the word accepted, he is called the acceptor. The person in whose favour it is drawn, or to whom it is ordered to be paid, is called the drawee, or payee, who, when he has indorsed it, is called the indorser. He, who is in possession of the bill, is the holder.

BILL OF FARE. An account of such provisions as are in season, or are to be supplied for the table.

BILL OF LADING, or Invoice. A deed signed by the master of a ship, by which he acknowledges the receipt of the merchant's goods, and obliges himself to deliver them at the place to which they are consigned.

BILL OF PARCELS. A tradesman's account of goods sold and delivered.

BILLET. A ticket for quartering soldiers: also a small paper, or note, folded up as a billet doux, or love-letter

BILLET. A small log of wood; also in Heraldry, a bearing in the form of a square, supposed to represent cloth of gold and silver.

BILLETING (in Military Affairs). Ordering soldiers to be quartered in particular houses by a billet or small ticket.

BILLIARDS. A game played on an oblong table, exactly level, and covered with cloth, by the means of ivory balls, which are struck or driven with sticks, made bending, so as to drive the antagonist's ball into holes, called hazards or pockets, at the corners or by the sides of the table. The art of the game lies in pocketing your antagonist's ball without putting in your own.

BILLION The sum of a million millions.

BILLS OF MORTALITY. Annual registers of the deaths and burials, which take place in the different parishes in and near London. The term is also applied to a register of deaths, in any town.

BINDING OF BOOKS. The art of doing up books in leather or vellum, as distinguished from those done up in boards or only sewed.

BINNACLE. A wooden case, containing the compasses, log glasses, watch glasses, &c

BINOMIAL. A term in algebra for any quantity consisting of two names, or terms, connected together by the sign +, or —, as $a + b$

BIPED. An animal with only two legs, as men and birds

BIQUADRATIC. The square squared, or the fourth power of any quantity.

BIRCH TREE. A tree with leaves like the poplar, the fruit of which is a squamose cone. The timber is used for hop-poles

BIRD-BOLT. A small arrow with three heads, which was discharged at birds from a cross-bow. The bird-bolt is still used in England as a bearing in coat armour.

BIRDCALL. A whistle or pipe to decoy birds.

BIRDCATCHING. The art of taking birds or wild fowl, by birdlime, nets, and decoys, which, as respects the more artful modes of catching birds, is called fowling In the western islands of Scotland, where the birds live in rocks, a dangerous mode of bird catching is in use.

BIRDLIME A glutinous substance, made of the bark of holly, which is spread on the twigs of trees to catch birds

BIRD OF PARADISE. See Paradise, Bird of.

BIRTH. A sea term for the station in which a ship rides at anchoring ground, as a good birth, for a good anchoring ground

BIRTHRIGHT (in Law). Honour or estate belonging to a person by right of his birth.

BIRTHWORT. A herb having a perennial root.

BISCUIT (from biscoctus, twice baked). A sort of bread much dried in baking; sea biscuit is dried harder than any other, that it may be better preserved.

BISECTION. The cutting any quantity, as a line or angle, into two equal parts.

BISON. A variety of the ox, which has its horns bent forwards, back gibbous, and mane long. It is very common in the western prairies. Herds of ten thousand are sometimes seen together. It is improperly called Buffalo, in the United States.

BISHOP. A dignitary in the Greek Romish and English churches. In the latter he presides over the clergy within a certain district, called his diocese Bi

shops in England are suffragans, or assistants, to the archbishop, who is the chief of the clergy in his province. The bishop is said to be installed, the archbishop to be enthroned. In America there is no archbishop.

BISHOPRIC. The diocess, or district, over which a bishop presides.

BISMUTH. A metal of a yellowish or reddish white colour. It is rather harder than lead, and scarcely if at all malleable, being very brittle; it melts easily, and is soluble in acids.

BISSEXTILE, or LEAP YEAR. A year consisting of 366 days, by the addition of a day in the month of February, when that year consists of 29 instead of 28 days. This happens every fourth year. The day thus added is also called Bissextile, and on this account, that Cæsar appointed it to be introduced by reckoning the twenty-fourth of February twice, and as that day was the same as the sixth of the calends of March, a day celebrated among the Romans on account of the expulsion of the Tarquins, it was called bis sextus calendarum Martii, and afterwards Bissextile. By the stat. 21 Hen. III. De Anno Bissextile, to prevent misunderstandings, the intercalary day and that next before it, are to be accounted as one day.

BISTER. A colour made of chimney soot boiled and diluted.

BISTOURY. A small surgical knife of various forms, according to the purpose for which it is intended.

BIT (in Carpentry). A boring instrument so constructed as to be taken out of the handle.

BIT, or BITT OF A BRIDLE. The iron attached to the bridle, which is put into the horse's mouth.

BITT. A sea term for the two pieces of timber to which the anchor cables are attached.

BITTER. A sea term for the turn of the cable round the bitts.

BITTER ALMOND. A sort of almond tree, the fruit of which is bitter.

BITTER-APPLE. See COLOQUINTIDA.

BITTER PRINCIPLE. The bitter parts of vegetable substances, which may be extracted by a chemical process. Artificial bitter is any bitter formed by the action of nitric acid on vegetable and other substances.

BITTER-SWEET. A sort of solanum, a perennial.

BITTERN, or BITTOUR. A bird of the heron kind, of retired habits, that conceals itself in the reeds and marshes. It sends forth a croaking note when it is disturbed. The American Bittern differs from that of Europe which is here figured

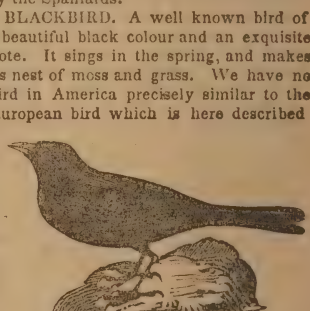
BITUMEN. A sort of mineral substance easily combustible with flame, greasy to the touch, and when ignited emits a strong odour. Naphtha is a fluid bitumen, asphal a hard species, and petrolium a viscid species of the bitumen.

BIVALVES. One of the three general classes of shellfish, the shells of which are composed of two pieces, joined together by a hinge.

BLACK. A colour which is supposed to be produced by the peculiar texture of bodies, which deaden as it were the light falling upon them, and reflect none, or very little of it, outwards towards the eye.

BLACK. A colour or dye, as lamp black, the smoke of resin, prepared by melting it in iron vessels; ivory black, made of burnt ivory, and used in miniatures; Spanish black, made of burnt cork, and first used by the Spaniards.

BLACKBIRD. A well known bird of a beautiful black colour and an exquisite note. It sings in the spring, and makes its nest of moss and grass. We have no bird in America precisely similar to the European bird which is here described



Our crow blackbird resembles it, but is larger

BLACKBERRY. The fruit of the bramble, or blackberry bush.

BLACK BOOK (in England). A book kept in the Exchequer, which contains the orders of that court.

BLACKCAP. A little bird with a fine black crown on its head.

BLACK HOLE. A place of confinement for soldiers.

BLACK LEAD. A mineral, the plumbago or graphites of Linnæus. It is found in lead mines, and is fusible only by a violent heat. Lead pencils and crucibles are made of it.

BLACK LETTER. A sort of old English alphabet.

BLADDER A thin membranous substance, which serves as the receptacle of some fluid, as the urinary bladder, and the gall bladder.

BLADDER-NUT. A tree, the fruit of which is contained in a membrane inflated like a bladder.

BLADDER SENNA. A shrub which yields a papilionaceous flower, that is succeeded by pods resembling the inflated bladder of fishes.

BLADE. The flat part of a sword or knife, resembling the blade or leaf of grass in shape.

BLADEBONE. The shoulder bone.

BLAIN (in Farriery). A distemper incident to animals, being a bladder at the root of the tongue, which stops the breath.

BLANCH FARM (in English Law). A term for a farm where the rent is paid in silver, not in black cattle.

BLANCHING. The art of making any thing white, as (in horticulture) the method of whitening salads. Blanching money is the annealing, boiling, and cleansing it when it is coined. Blanching copper is done in various ways, so as to make it resemble silver. Blanching is also the operation of covering iron plates with a thin coat or crust of tin. Blanching almonds is the skinning them by means of hot water.

BLANK. A void space in any writing or printing.

BLANK VERSE. That which has no rhymes.

BLANKETS (in Printing). Woollen cloths to lay between the tympans of a printing press, in order to produce a fair impression.

BLANKETS. A sea term, for combustibles made of coarse brown paper steeped in nitre, dried, and then steeped again in tallow, resin, and sulphur, they are used in fireships

BLAST. A disease in grain and trees called also a blight.

BLASTING (among Miners). The tearing up rocks by the force of gun powder.

BLASTING-BELLOWS. Bellows which are used to produce a more than ordinary degree of heat in furnaces

BLAZONRY, or BLAZONING. That branch of the art of heraldry which consists in expressing in proper terms all that belongs to coats of arms. The word comes from the German blasen, to blow; because a trumpet used to be blown at justs &c. previously to the herald's recording the achievements of the knights.

BLEACHING. The process of whitening linen by exposure to the sun and air; or, as is now more commonly in use, by the application of chemical preparations.

BLEMISH (in Farriery). Any imperfection in a horse which impedes a sound warrant, as broken knees, cracked heels, &c.

BLENDE. The ore of zinc.

BLIGHT. A disease incident to plants, which consists in a sort of fungus, that converts the affected part into a sooty mass.

BLINDS. A contrivance to prevent any one seeing through a window; in Military Affairs, bundles of osiers used at the heads of trenches, to protect the men

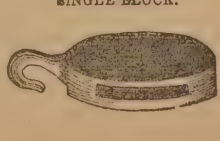
BLINDWORM, or SLOWWORM. A worm so called from the smallness of its eyes and the slowness of its motion

BLISTER. A pustule in the skin, filled with serum; in general, any swelling caused by the separation of the outer integument of any substance from that which is underneath.

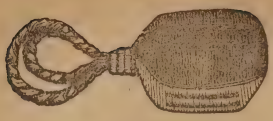
BLISTER (in Medicine). The plaster or application that raises a blister, mostly made of the cantharides, or Spanish flies.

BLOCK. A sea term for a pulley, or series of pulleys, mounted in a frame, or shell, which serves to facilitate the passage of the ropes. Blocks are single, double, treble, &c. according to the number of shivers in them through which the running ropes run.

SINGLE BLOCK.



DOUBLE BLOCK.



TREBLE BLOCK.

BLOCKADE. The blocking up the roads and avenues to a place, by means of soldiers, so as to prevent any ingress or egress.

BLOOD. A warm red fluid, of a saltish taste and urinous smell, circulating hrough every part of the body by means of arteries and veins. The blood is found to contain an insipid water, which soon becomes putrid, an empyreumatic oil, an ammoniacal spirit, and the remainder carbon.

BLOOD (in Law). Is regarded in descent of lands, for a person must be next and most worthy of blood in order to inherit his ancestor's estate.

BLOOD-HORSE. A breed of horses originally from the Arabian stock, the excellence of which consists in the compactness of his fibre, that adds to his strength without increasing his bulk.

BLOODHOUND. A hunting dog, of such exquisite scent, that he will follow the track of men as well as of animals.

BLOOD-RED-HOT. The last degree of heat given by smiths to their iron in the forge.

BLOODSHOT. A distemper in the eyes, when the vessels are so distended as to make them appear red.

BLOOD-STONE A stone which serves to stop bleeding.

BLOODSUCKER. A leach which sucks the blood of any animal to which it is applied.

BLOWING GLASS. The process in glass houses of forming glass into various shapes, by means of blowing through a blow-pipe dipped into the melted glass.

BLOW-PIPE. A wind instrument, which consists of a hollow tube, ending in a cavity as fine as a wire, through which air may be directed with considerable force against a flame, so as to heat substances with great rapidity. It is used by chymists, enamellers, glassmakers, &c

BLUBBER. The fat of the whale before it is boiled. Sea blubber, the vulgar name of a shellfish.

BLUE. One of the seven primitive colours into which they are divided when refracted through a glass prism. Blue, as a colour in painting, is distinguished into ultramarine, from the azure stone; blue ashes, used in limning, fresco, and miniature; blue verditer, a blue somewhat inclining to a green; Prussian blue, a colour next to ultramarine for beauty.

BLUE BIRD. A beautiful North American bird, with a soft warbling note, which is one of the first harbingers of spring.

BLUEBOTTLE. An animal, having a bellshaped flower. The flower is borne in coats of arms.

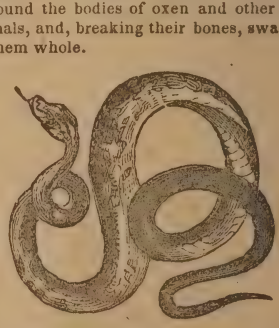
BLUEBOTTLE. A large kind of fly with a blue body.

BLUEING. The process of heating iron and other metals in the fire, until they assume a blue colour, which is the practice of gilders before they apply the gold and silver leaf to them

BLUFF. A sea term for a high land projecting almost perpendicularly into the sea.

BLUNDERBUSS. A short brass gun with a large bore.

BOA CONSTRICTOR. A serpent of immense size and strength, a native of Africa and India, measuring sometimes ten yards in length. It will twist itself round the bodies of oxen and other animals, and, breaking their bones, swallow them whole.



BOAR The male of the swine. The boar's head is often borne in coats of arms.

BOARD A sea term, for the space a

ship runs over between tack and tack, as to make short boards, that is, to tack frequently; also the ship itself, as to go aboard, that is, into the ship; so board and board is said of two ships coming so near to each other as to touch by the board over the ship's side.

BOARD (in Carpentry). Any piece of timber sawed to a less thickness than about an inch; all above this thickness are planks.

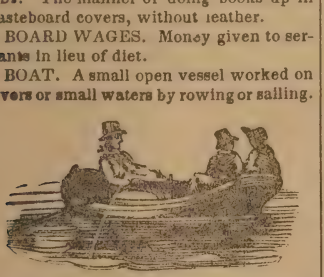
BOARD, or PASTEBOARD Layers of paper so pasted together as to make a substance as hard as a board.

BOARDING. The fixing of boards for any purpose, as a floor; (in Naval Tactics) the entering a ship in a forcible manner.

BOARDS, or by way of contraction, BDS. The manner of doing books up in pasteboard covers, without leather.

BOARD WAGES. Money given to servants in lieu of diet.

BOAT. A small open vessel worked on rivers or small waters by rowing or sailing.



BOATBILL. A bird of South America, having a bill that resembles a boat in shape. It lives upon fish, and darts down upon them as they are swimming.

BOATFLY An insect with an inflected snout, that lives in stagnant waters.

BOATSWAIN A sea term, for the officer who has the boats, anchors, &c. in his charge

BOB. The metallic weight attached to a pendulum.

BOBBIN. A sort of tape.

BOBBINS. Little pins of wood with a notch, on which thread, &c. is wound.

BODKIN. A long sort of pin, on which women used to roll their hair.

BODY (in Geometry). Any solid having three dimensions, length, breadth, and thickness. Regular bodies, which have all their angles and sides similar and equal, are of five kinds, namely, tetraedron, a body contained under four equilateral triangles; hexaedron, a body containing six squares; octaedron, a body having eight triangles; dodecaedron, a body containing twelve pentagons; icosaedron, a body containing twenty triangles. Irregular bodies are solids which are not bounded by equal, and like surfaces

BODY (in Physics) An extended solid substance, consisting of hard, impenetrable, moveable particles. It is a hard body when its parts do not easily yield to any stroke or percussion; a soft body when it yields to every stroke, and thereby undergoes a change; an elastic body, that changes its form with every stroke, but recovers it again when the impelling force is removed.

BODY. In the phrase 'to bear a body,' a term applied by painters to any colour which is of a nature to be ground so freely, and to mix with oil so entirely, as to seem one thick oil of the same colour.

BODY. Of a chemical vessel, that which holds the matter in distillation. Body of a pump, the thickest part of the barrel or pipe. Body, in an army, any number of forces united under one commander.

BOHEA TEA One of the superior kinds of tea that comes from China.

BOILING POINT. The fixed point or degree of heat required to produce the ebullition or boiling of a fluid. Every liquid has a fixed point at which boiling commences, and this is called the boiling point. Thus water begins to boil at the temperature of 212°. After a liquid has begun to boil, it will not become hotter, for although a stronger heat makes all liquids boil more rapidly, yet it does not increase their temperature

BOLE. A friable earth of the argillaceous kind, which unites with water so as to form a paste. The Armenian bole, or bole armeniac, is a bright red coloured earth, so called from Armenia, the country from which it is procured

BOLL A measure of two bushels.

BOLOGNA STONE. A phosphoric stone, first found at Bologna in Italy. It is a gray soft sulphureous stone, about the size of a large walnut, which shines in the dark after calcination. This stone is the native sulphate of carytes.

BOLSTER. A soft pillow for a broken limb; in Farriery, it is the name of those parts of a saddle which are raised upon the bows to receive the rider's thighs.

BOLSTER A sea term, for a piece of timber cut and placed for the easement of the cable.

BOLT. An iron pin used for strengthening timber

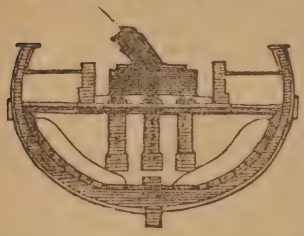
BOLUS An internal medicine, of a consistency thicker than honey.

BOMB A hollow ball of cast iron filled with combustibles, and discharged from a mortar into towns, when, by bursting, it causes much mischief

BOMBARDMENT. The discharging of bombs into a besieged place.

BOMBIC ACID An acid liquor contained in a reservoir near the anus of the silkworm.

BOMBKETCH. A small vessel built and strengthened with large beams, for he use of mortars at sea.



BOMPERNICKEL. A name given in derision to the German rye-bread, signifying, good for nothing.

BONA FIDE. With good faith; without fraud or subterfuge

BOND (in Law). An obligation or covenant in writing to pay any sum, or perform any contract.

BOND (in Carpentry). The binding of any two pieces together by tenanting, morticing, &c. In Masonry, it is the disposition of stones or bricks in a building, so that they most aptly fit together; stones having their length placed in the thickness of the wall are called headers, and those whose length extends along the face or exterior of the wall are called stretchers.

BOND-TIMBERS. The horizontal timbers bedded in stone or brick walls, for strengthening the masonry.

BONDSMAN. One bound or giving security for another.

BONE. A hard, dry, insensible part of the body, composed of a spongy reticular substance, and an oily matter called marrow There is also a considerable portion of phosphate of lime that enters into their composition. The bones of the human body are in number about 250.

BONE. A sea term, in the phrase 'To carry a bone in her mouth,' applied to a ship when she makes the water foam before her in sailing.

BONE-LACE. Lace made of bobbins that are formed from bones.

BONES. A sort of bobbins made of trotter-bones, for weaving bone lace

BONES. A name in Mathematics given to Lord Napier's rods for facilitating arithmetical calculations.

BONING A term among surveyors, to denote the laying poles upon the ground in such a manner that all may lie in a straight line.

BONNET (in Heraldry). A cap of velvet worn without a coronet.

BONNET. A sea term, for the addition of a small sail made to fasten with latchings to the foot of the other sails.

BONNET (in Fortification). A small work composed of two faces, usually raised before the saliant angle of the counterscarp.

BONZE. A priest in China, Japan, and Farther India who wears a chaplet of beads about his neck, and carries a staff, having a wooden bird at one end.

BOOBY. A South American bird of the pelican tribe.

BOOK. Any folded leaves which are or may be written upon; also a general name for any literary composition, but more particularly any composition large enough to be formed into a volume. Before the use of books or volumes things were committed to writing on stone, wood, bark, &c. The Decalogue was written on tables of stone; so likewise, as we learn from Josephus, the children of Seth wrote their inventions and astronomical observations on two columns, one of brick and the other of stone, the latter of which was standing in his day. Hesiod's works were originally written upon tables of lead; Solon's laws upon wooden planks, &c. and the Parian Chronicle, or a chronicle of the affairs of Athens, on marbles, which are now known by the name of the Arundelian. The Scythians, Celts, and their several descendants, the Goths, Teutones, &c. also used to write on trees whatever they thought worthy to preserve in writing. Tables of wood, box, and ivory were also common among the ancients; but we find that the Romans were accustomed to write upon tables of wax, by means of a style or bodkin, so contrived that they could also erase what they pleased. The finest and thinnest parts of the bark of trees, as of the lime, the ash, the maple, and the elm, were also employed, whence the Latin name liber signifies both book and bark The English word book is derived immediately from the Saxon boec, Low German bok, High German buch; and is either from buch, which signifies a beech, because the bark of this kind of tree was used; or from biegen, to bend, because the leaves were folded or bent into the form of a book. When books were rolled up, they were on that account called volumen, a volume, a name afterwards given to paper and parchment folded to e-

ther. Sometimes the roll consisted of several sheets of bark fastened together and rolled upon a stick, called an umbilicus. Before the introduction of printing, books were become so scarce in the middle ages, that, in Spain, one and the same copy of the Bible, St. Jerome's Epistles, and some few volumes of ecclesiastical offices served several different monasteries. Since that period the increase of books has been prodigious; and in consequence of the different editions, modes of printing, size, type, and other particulars connected either with the external form or internal contents, the knowledge of books has become a particular study and pursuit, under the name of bibliography.

BOOKBINDING. The process of binding books, or putting the sheets together into the form of books. The bookbinder receives the sheets which compose a book immediately from the printer, and after having folded them in the order of the signatures, or letters at the bottom of the page, they are first beaten with a hammer on a stone, to make them lie close and smooth, after which they are put into a press, and sewed with bands, or strips of leather fastened at certain distances, which, being all glued together very firmly, form the back of the book, to which the pasteboards are attached by means of the bands, so as to form the sides. In all this process of fixing on the sides, much art and nicety is required in rounding the back, and keeping the whole firmly fixed in the press. After this the book is put into the cutting-press between two boards, one lying even with the press for the knife to run upon, the other above, for the knife to run against. In this manner the leaves and boards are cut to form an even edge. The next operation is the sprinkling of the leaves, which is done by means of a brush dipped in vermilion and sap green. The covers of leather, &c. being first moistened, are cut to the size of the book, smeared with paste, and then stretched successively over the back and the two sides, after having taken off the four angles, and indented and platted the cover at the head band. When thus far finished, the book is covered and bound between two bands and set to dry. It is afterwards washed with paste and water, and then sprinkled with a brush, unless it is to be marbled, which is done by making spots with vitriol. The book is then glazed with the white of an egg, and, lastly, polished with a hort iron. The letters and ornaments are made with gilding tools, or brass cylinders, rolled along by a handle: to apply the gold, the leather is glazed with a liquor made of the white of eggs, diluted with water and when nearly dry the gold is laid on Such is the process when a book is fully bound; but books may sometimes be only sewed and have a paper cover, when they are said to be sewed: sometimes the boards are covered with paper only, when they are said to be in boards; and sometimes they have a leather covering on the back, extending a small way over each side, when they are said to be half bound.

BOOK-KEEPING. The art of keeping accounts, or recording the mercantile transactions of a man, so that he may thoroughly know the whole state of his affairs, or any part of them, with ease and despatch Accounts may be kept either by single or double entry; the former of which may answer the purpose where the dealings are on a small scale, but merchants, whose concerns are extensive, keep their books according to the double entry, or Italian method In single entry two books only are wanted, namely, a journal, or day book, in which the transactions of the day, as they occur in the course of business, are entered; and the ledger, or post book, in which all the accounts drawn out of the journal are placed under the proper name, either on the debtor or creditor side. Those who keep their accounts by double entry, have occasion for several books, the three principal of which are, the waste book, the journal, and the ledger. The waste book is a book containing an inventory of a merchant's effects and debts, with a distinct record of all his dealings. The act of placing any transaction under a given account is called the entry; if placed on the Dr. or debtor's side, it is debiting the account: if placed on the Cr. or creditor's side, it is crediting. The waste book opens with the inventory, which consists of two parts; namely, in the first place, of a man's effects, and what is due to him; and in the next place, what is due by him. After the inventory follow the daily transactions as they occur in business The accounts of persons are debited under their respective names when they become indebted to the merchant, and credited when the merchant becomes indebted to them. Accounts of property are debited when they come into his possession, and credited when they go out of it. In the same manner the accounts of profit and loss are kept, which are debited on account of a loss, and credited on account of a gain. Those marked Dr. are placed on the left side, and those marked Cr. on the opposite side, marked Contra Cr This book should contain the names of per

sons with whom the merchant deals, the conditions of bargains, the terms of payment, the quantity, quality, and prices of goods, with every other particular needful to be recorded. The journal, or day book, is intermediate between the waste book and the ledger, wherein the transactions recorded in the waste book are prepared to be carried to the ledger, by having the proper debtors and creditors ascertained and placed in order. In the journal, persons and things are debtors to other persons and things as creditors, and in this it agrees with the ledger, but in other respects it agrees with the waste book. Every case or transaction entered into the journal is called a journal post, or entrance. The ledger is the principal book, in which all the several articles of each particular account that lie scattered in other books, according to their several dates, are collected and placed together in such manner that the opposite parts of every account are directly set fronting one another, on opposite sides of the same folio ; that is to say, the debtor, or debtor part, is entered on the left or debtor side of its own account, where it is charged debtor to the creditor part ; and the creditor, or creditor part, is posted to the right or creditor side of its account, and made creditor by the debtor part. Hence it is that the Italian method of book-keeping is said to be by double entry, because every single case of the waste book requires to be entered twice in the ledger, that is, once for the debtor and once for the creditor. In addition to the above three books, most merchants have several other books, as the cash book, which contains in debtor and creditor all the cash that comes in and goes out ; the debt book, in which are entered all sums that become due, either to be received or paid, by bills of exchange, notes of hand, &c. ; besides this, some merchants require a book of invoices, a book of commissions, a book of orders or advices, &c. according to the nature of their transactions.

BOOKSELLER. One who deals or trades in books, particularly one who sells the books printed by others, as distinguished from the publisher, who sells the books, that are printed on his own account. The bookselling business has always held a higher rank than any other common trade ; and on the continent, as at Tubingen, Salisburg, and Paris, booksellers class with the members of the learned professions, and have the privileges of students at the university. On the introduction of printing, the bookseller, printer, and scholar were one and the same person.

BOOKWORM A little insect which breeds and eats holes in books, especially when damp.

BOOM. A sea term, for a long pole to extend the bottoms of particular sails, as the jib boom, studding sail boom. The boom of a harbour, a strong iron chain thrown across a harbour, to prevent the entrance of an enemy.

BOOR. Properly, a peasant, particularly applied to the rude peasantry of Russia

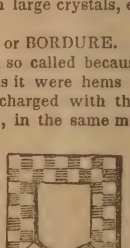
BOOT OF A COACH The space underneath between the coachman and the body of the coach.

BOOTES. A northern constellation, consisting of fifty-four stars, according to M Flamstead.

BORACIC ACID. An acid drawn from borax by combustion.

BORAX. A substance dug out of wells in Thibet, and imported from India It is sometimes in the form of solid grains, sometimes in large crystals, enclosed in a fatty matter.

BORDER, or BORDURE. An ordinary in Heraldry, so called because it borders round, and as it were hems in the field Borders are charged with things natural and artificial, in the same manner as the field



BORDERERS. Those who lived on the borders of England and Scotland, and were formerly engaged in perpetual hostilities

BORE. The hollow of a piece of ordnance

BORE-COLE, or CURLED COLEWORT A hardy sort of kale, which is improved by the frost.

BORER. A piercer, or instrument to bore holes with.

BORING. The method of piercing the earth in search of minerals.

BOROUGH. From the German burg it formerly signified a fenced town, but in England is now taken for any corporate town that is not a city, and that sends members to parliament : in Scotland there are still royal burghs, or boroughs, that are held of the king. Rotten Boroughs, are ancient towns, with the privilege of sending members to Parliament, which are now reduced, and have but a few persons living in them

BOROUGH-ENGLISH A customary descent of land in some places to the younger sons.

BOS. The generic name in the Linnæan system for all animals of the ox tribe, as the bison, buffaloe, common ox, musk ox, &c.

BOTANY. The science which teaches the knowledge of plants, as to their discriminating characters, structure, growth, culture, diseases, and the like. Plants are distinguished into natural orders, as trees, the stems of which send forth branches from the middle and top: shrubs, the stems of which send forth branches from the bottom: undershrubs, when the stems of the shrubs perish: herbs, which bear flowers and seeds, and then die; if they die at the end of one year they are called annuals, if at the end of two years biennials, if they last three or more years they are perennials: fungi are fleshy, coriaceous, or woody: algæ, or seaweeds, have neither stems nor leaves: mosses, which have only leaves and fruit: ferns, that never send forth more than one leaf on a footstalk: grasses, which are distinguished by their stem, which is a culm or straw: lilies, which have a tuberous or bulbous root: palms, which have an arboreous stem, from which the leaves grow, and not the branches.

The parts of plants are distinguished generally into the root, the stem, the bud, the leaf, the inflorescence, and the fructification. The root is the part through which the plant derives nourishment from the earth; a plant is either annual, biennial, or perennial, according to the time that the root lasts. Roots are sometimes called *fleshy*, when they consist of a fleshy prolongation; *fibrous*, when they consist of many fibrous prolongations; *tuberous*, when they consist of a thick fleshy substance, as the potatoe; *bulbous*, when they consist of a bulb or fleshy body, provided with several coats, as the onion or the lily; *granulated*, when they have a cluster of little bulbs, as in the saxifrage; *creeping*, when they have a horizontal prolongation of the root growing under the earth, and sending forth new plants of its kind, as couchgrass

The stem is the prolongation of the plant above the soil, proceeding from the root. The woody stem of trees is the trunk; that which is herbaceous is the stalk, and belongs only to herbaceous plants; but the stalk of grasses, rushes, and similar plants, is called the culm; and when the stalk bears flowers and fruits immediately from the root, and not leaves, it is a scape, as in the primrose and cowslip: the stalk which springs from the stem or branches, bearing the flower and fruit, is the pedunicle or flower stalk; that which bears the leaf only is the petiole, or footstalk.

The bud is that part of the plant which contains the embryo of the leaves, flowers, &c., and serves as their hybernaculum, or winter receptacle. The bud is guarded by scales, and furnished with gum, or wool, as an additional defence. The moss bud is a roundish longish body, proceeding from the mother plant, and becoming itself a new one; the gongylus is a knob belonging to the seaweed, which falls off on the death of the mother plant, and becomes a new one.

The leaf is the herbaceous production from the ascending stem; when the stalk and leaf are so intimately connected that they cannot be distinguished, this is called a frond, as in the palms and the algæ. To the leaf belong several appendages, which serve either for ornament or some specific use, as the bracteæ, or floral leaf, that stands near or between the flowers, forming a tuft, as in the pineapple; the stipula, a small leaf that appears on the stem, in the place of a footstalk; the sheath, a prolongation of the leaf that rolls itself round the stem, as in grasses; the ascidium, or bottle, a foliaceous cylindrical hollow body, which is generally furnished with a cover, and contains water; the ampulla, or bladder, a round hollow body at the roots of water plants; the gland, a round body situated on the leaves, which serves as an organ of respiration; the spine, or thorn, that rises in the interior of the plant, as in the sloe, the aculeus, or prickle, that issues from the bark; the cirous clasper, or tendril, a filiform body which serves to support weak plants, as in the vine, &c.; the arista, or awn, a pointed beard in grasses; the pili, hairs, fine slender bodies, which include all kinds of pubescence, as bristles, wool, &c. some of which discharge a poison, as in the nettle.

The inflorescence is the mode of flowering, which differs very much in different plants, and is distinguished into verticillus, the whorl, which consists of several flowers, standing at intervals, surrounding the stem, as in the mint; the racemus, the raceme, a peduncle with short lateral branches, as in the currant and the vine, &c.; the corymbus, or corymb, an erect raceme, the lower peduncles of which are so lengthened as to be of equal height with the upper; when the peduncles take their rise from the same centre, but the subdivisions are irregular, it is a cyme; when the peduncles rise from the same centre, but the whole is

disposed in regular order, it is an umbel; the capitulum has many flowers, standing thick, so as to form a head, as in the globe-amaranth; the fasciculus, fascicle or bundle, a number of simple peduncles rising at the root of the stem from several points, as in the sweetwilliam; the spica, or ear, as in wheat and barley; the panicula, or panicle, in which the flowers or fruits are scattered on branches unequally divided, as in the oat grass; the spadix, so called from the spadix vagina, or sheath, which contains the flower stalks; the amentum, or catkin, a long stem thickly covered with scales, under which are the flowers or essential parts, as in the willow and hazel; the sorus, or mass, an inflorescence peculiar to the ferns, which have masses of seed capsules in their fronds.

The fructification consists of the flower and the fruit. The principal parts of the flower are, 1. The calyx, or flowercap, or envelope of green leaves, which, when it immediately encloses the flower, is a perianth; when it contains many flowers in one is an anthodium; when it consists of many leaves surrounding the flower, as in umbelliferous plants, is an involuere. The calyx of grasses is called the glume; when it rolls itself round the stem, as in some grasses, it is called the vagina, or sheath; and in some aquatic plants the spatha, or spathe. 2. The corolla, or blossom, the envelope of small leaves of various colours which constitute the flower properly so called; the divisions of the corolla are called the petals; the parts of the corolla are the tubus, the tube, the hollow underpart of a corolla that has but one petal; limbus, the border or opening of the corolla; labia, the lips; barba, the beard; rictus, the gape between the extremities of the lips; faux, the throat or the opening of the tube; nectarium, the nectary, which commonly serves to secrete a sweet juice; this is sometimes in the shape of a hood, and is called the cucullus, or hood, as in the aconite or monkshood; sometimes in the shape of a spur, called calcar, as in the violet; also in that of an arch, a crown, &c. 3. The stamen is an essential part of the flower, which consists of the filament or thread that supports the anther; anthera, the anther, a hollow cellular body; and pollen, the powder or fine dust contained in the anther. 4. The pistil, the second essential part of a flower, stands in the centre of the circle formed by the stamen and consists of the germen, the rudiments of the future fruit or seed; the stylus, style or shaft, a small stalk seated on the germen and the stigma, the top of the style.

The fruit proceeds from the germen, and consists of, 1, the pericarpium, pericarp or seed vessel, a hard hollow body, that is of different kinds, as capsula, a capsule, or thin coat, divided into cells; a siliqua, or pod, a dry elongated pericarp, consisting of halves or valves, as in the mustard; the legumen, the legume, as in the pea kind; nux, the nut, a pericarp covered with a hard shell; drupa, or drupe, a nut covered with a fleshy coat, as in the plum; bacca, the berry, a succulent fruit containing many seeds, as the gooseberry, the currant, &c 2. The semen, or seed, that part of the plant destined for propagation, consists of different parts, as the cotyledones, cotyledons or seed leaves; corculum, the circle or little heart, the germ of the new plant; hylum, the eye, the deep scar in the seed which has been occupied by the circle; plumula, the plumule, or that part of the circle which ascends to form the leaves; rostellum, the other part of the circle, which descends to form the root. Besides the seed is furnished with different appendages, as arillus, the aril, a soft membrane extended over the seed; pappus, the down, cauda, the tail; rostrum, the beak; and various spines, or hooks, &c. which serve to attach the seeds to different bodies, and promote their dispersion. 3. The basis, or base, is the receptacle or body on which the flower stands, the principal part of which is the thalamus, or fruit bed; when this is round or oblong it is called pelta, a target; when plateshaped, scutella, a shield; when convex, tuberculum, &c.

Besides the science of botany comprehends also a knowledge of plants as to their vegetation, anatomy, chemical composition, and diseases, which are all included under the physiology of plants. The vegetation of plants may be distinguished into germination, when the seed begins to burst vernation, when the buds begin to burst virginity, when the flowers or buds are not yet unfolded; defoliation, when the leaves in autumn begin to fall off; sleep, when during the night the leaves hang down; æstivation, when the flower is in perfection; fructification, when the anthers communicate the fructifying dust to the neighbouring parts.

The anatomical structure of plants comprehends the cuticle, the cortex or outer bark; the liber, or inner bark; the liburnum, or soft wood; lignum, the wood medulla, the pith; the air vessels, which are the conductors of the air; the adducent or spiral vessels, which proceed with or are entwined round the air vessels; the reducent vessels, which are supposed

serve the purpose of transpiration, the lymphatics, which are reticularly united, the cellular texture, a delicate membrane surrounding all the vessels, and containing a resinous juice, as in the fir tribe, and a gummy juice in fruit trees: the glands, which serve as secretory vessels.

The principal chymical constituents of plants are carbon, hydrogen, and oxygen, but chiefly the former, besides which azote, sulphur, and other simple substances, may be found in small quantities. The principle compound substances which form the sensible ingredients of plants are, the acids, mucilage, sugar, starch, albumen, gluten, fixed and volatile oil, wax, resin, camphor, &c.

BLOOD-STONE. A green siliceous stone, classed among the gems; a variety of heliotrope spotted with jasper, as if with blood.

BLOWPIPE. An implement by which a small jet of air is directed into a flame, and that flame employed on a mineral substance to virtify or fuse it. It is thus used by artists for the purpose of enameling, and of softening and soldering small pieces of metal; by glass-blowers, in making thermometers and other glass instruments; and by chemists and mineralogists, in the examination of substances. Of late this instrument has been greatly improved by the introduction of the self-acting or oxyhydrogen blowpipe.

BLUE. In painting and the fine arts, one of the seven primary colors, which, mixed with red, produces purple, or with yellow makes green. The various shades of blue used in painting are—Prussian blue, Ultramarine, Blue ashes, and Blue verditer.—Indigo forms the chief ingredient in blue, used as a dye-stuff. *Prussian blue*, the ferrocyanate of peroxide of iron, prepared from bullocks' blood, carbonate of potash, sulphate of iron and alum.—*Saxon blue* is sulphate of indigo.—*Blue verditer* is an impure carbonate of copper. Blue is also a prefix to numerous compounds: as Blue Ointment, or mercurial ointment: Blue Pill, or mercurial pill: Blue-stone, or blue vitriol, the sulphate of copper: Blue Eye-water, the solution of ammoniated copper.

BOA, a genus of large prehensile-tailed serpents, with jaws capable of great dilatation. The great boa-constrictor, when full grown, is about thirty-five feet long.

BOG MOSS, in botany, a genus of aquatic plants, the *Sphagnum palustre* of the tribe Gymnostomi. The bogs, which are chiefly formed from the continued growth of this plant, are often of great depth, some of them having increased to eight feet in depth since the period of the Roman occupation of this country.

BOG ORE. A species of iron ore formed in bogs or other places from the ore contained in chalybeate springs, and in some instances, from the shields of infusoria.

BOHEA (Chinese). An inferior kind of black tea, of which there are two sorts from China: the inferior, called Canton Bohea, which is a mixture of coarse tea and the refuse of Congou: the better kind comes from the district of Bohea, in Fokien.

BOILING-POINT. The degree of temperature at which liquids are in a state of ebullition by heat. The boiling point varies greatly for different substances, but is constant for the same under the same circumstances. Thus, of water the boiling-point is 212 deg.: of alcohol, 176 deg.: of ether, 96 deg.: and of mercury, 660 deg.

BOLE. A friable clayey slate or earth, usually colored with oxide of iron. The kind called Armenian bole is used as tooth powder, and as coloring to the sauce called the essence of anchovies. It consists of silica, alumina, and iron. Boletic Acid is an acid contained in the juice of the boletus.

BOLOGNIAN STONE. A variety of the sulphate of barytes, found near Bologna, which, when powdered and heated with charcoal, shines in the dark.

BOLUS (Lat). In physiology, the mass formed by the food after mastication and insalivation, and thus prepared for its passage into the pharynx, is named the alimentary bolus. In pathology, a form of medicine in which the ingredients are made up into a soft mass, larger than pills, to be swallowed at once.

BOMBACEÆ. A nat. order of dicotyledonous or exogenous plants, consisting chiefly of large tropical trees, with strong cotton-like flowers. From the quantity of cotton they produce they have been called cotton trees.

BOMBIATES. A genus of salts, the combination of bombic acid with other bases.

BOMBUS. A genus of hymenopterous insects, with hairy bodies (the Humble Bees): fam. Apidæ.

BOMBYCILLA. A genus of birds the type of the sub-family Bombycillinæ; a group of the Fruit-eaters, the Wax-chatterers.

BORON. The chief constituent of borax, a rare solid substance, somewhat resembling silicon. B. group of minerals: include sassolite and borax.

BORREBY SKULLS. Human skulls taken from tumili, of the stone period, at Borreby, in Denmark.

BOS. A large horned animal, the type of Bovidæ, belonging to Ruminantia, of service for food, and as a beast of burden. Fossil remains found in Pliocene.

BOTANY. In the classification of the botanical nomenclature there are two principal systems—the sexual or artificial one of Linnæus, and that of Jussieu, which is according to the natural order of plants. The Linnæan system is founded on the number, situation, and proportion of the essential organs of fructification, denominated stamens and pistils. The names of the classes and orders are of Greek derivation, and allude to the functions of the respective orders. Thus the vegetable kingdom is divided by that great naturalist into 24 classes, of which 23 belong to flowering, and 1 to flowerless plants. The first eleven classes are distinguished entirely by the number of stamens, which are called Monandria, Diandria, Triandria, &c., as far as Dodecandria, from the Greek words one, two, three, &c. combined with male (andria), because the stamens of flowers are compared to males, and the pistils to females. Hence the orders, as far as Polygynia, are denominated Monogynia, Digynia, Trigynia, &c., according as the flower has one or more pistils; so called from the Greek *mone* (one), and *gune* (a female). Thus the jasmine, having two stamens, and one pistil, is placed in the second class of the first order of that class, or Diandria Monogynia. The following is a summary of the 24 classes, which owe their distinctions chiefly to the stamens and pistels: 1. Monandria, one stamen. —2. Diandria, 2 stamens.—3. Triandria, three.—4. Tetrandia, four.—5. Pentandria, five.—6. Hexandria, six.—7. Heptandria, seven.—8. Octandria, eight.—9. Enneandria, nine.—10. Decandria, ten.—11. Dodecandria. twelve.—12. Icosandria, twenty or more stamens, inserted into the calyx.—13. Polyandria, all above twenty inserted into the receptacle.—14. Didynamia, four stamens, two long and two short,—15. Tetradynamia, six stamens, four long and two short.—16. Monadelphia, the stamens united into the bodies by the filaments.—17. Diadelphia, the stamens united into the bodies by the filaments.—18. Polyadelphia, the stamens united into three or more bodies by the filaments.—19. Syngenesia, anthers united into a tube.—20. Gynandria, stamens inserted either upon the style or germen. 21. Monœcia, stamens and pistils in separate flowers, but on the same plant.—22. Dicœcia, stamens and pistils, like the former, in separate flowers, but on two separate plants.—23. Polygamia, stamens and pistils separate in some flowers, united in others, either on one, two, or three distinct plants.—24. Cyptogamia, stamens and pistils either not well ascertained, or not to be numbered with certainty.

The Natural System of Plants, as devised by Jussieu and De Candolle, differs most materially from the Linnæan System; it takes into consideration the entire organization of the plant, with its properties and peculiar habits. The most striking genus of a tribe of plants gives name to the order; as, for instance, the Rose (Latin rosa), forms the type of the natural order Rosaceæ; and the Violet, that of the order Violaceæ. In this manner Jussieu divided the whole vegetable kingdom into 15 classes, and the genera into 100 orders, but which number has been gradually increasing with the progress of discovery.

In the Natural System the vegetable world has been classified under two grand divisions—the Vasculares and the Cellulares; and these again divided into classes and sub-classes,

Vasculares. Class I. Dycotyledons or Exogens. The plants of this class have stems consisting of concentric layers, formed by external annual additions, and are composed of vascular and cellular tissue; the flowers are furnished with male and female organs of reproduction, called stamens and pistils. Class II. Monocotyledons or Endogens. The stems of this class are formed by the addition of new fibres to the interior of the stem already formed; flowers sexual, the seed consisting of one cotyledon.

Cellulares. Class 1. Semi-vasculares. Plants having vessels as well as cellular tissue; the stems are increased by simple elongation; the leaves veined and forked; the sexual organs distinct and visible under the microscope only. Class II. The Agamæ are plants which increase by elongation or irregular expansion of their parts, and are wholly composed of cellular tissue, showing, under the microscope, no sexual organs whatever. These consist of the Fungi, Mosses, Lichens, Hepaticas or Liverworts, and Algæ. The Dicotyledons are divided into four sub-classes—the Thalamifloræ, Calycifloræ, Corollifloræ, and Monochlamydeæ.

BOULDERS. In geology, fragments of rock embedded in diluvial deposits; sometimes found lying on the surface of the ground, and bearing marks of abrasion and transport. Boulder formations are deposits of clay, gravel, &c., containing fragments of triturated rock.

BOW. A sea term, for an instrument fixed on a staff, with vanes, for taking the sun's altitude at sea; also the rounding parts of the ship's side, distinguished by the starboard and leeboard into the weather and lee bow.

BOW. The name of several things so called from their curved figure, as the bow of a key, the arched part to receive the finger; the bow of a saddle, the piece of wood on each side, laid archwise to receive the upper part of a horse's back; bow of a violin, the round stick furnished with hair, with which the performer plays.

BOW An instrument for shooting

arrows. The long bow, the favourite of the English army in former times, is simply a bow with a string fixed at each end, to which the arrow was applied. It is used with great dexterity by the Tartars of Asia, and the savages of America

BOWSPRIT. A mast projecting over the stem or head to carry the sail forward.

BOWYER. A bowmaker; the bowyers are one of the city companies in London.

BOX. Any case of wood, iron, or leather, which serves for conveying or keeping things.

BOX. A plant, which is of two kinds; namely, the dwarf box that is used for borders in gardens, and the box tree, which is a shrub or tree. The wood of this is yellow and hard.

B. R. In England, an abbreviation for Bancus Regis, the Court of King's Bench.

BRACE. What holds a thing tight, as the braces of a drum; in Carpentry, a piece of timber which serves to keep the frame work tight; in Printing, a crooked line marked thus } which serves to enclose words that are to be together.

BRACELET. An ornament for the arm or wrist; also a piece of defensive armour for the arm.

BRACHMANS, or BRAMINS. The priests or philosophers among the Hindoos; so called from their god Brahma, to whose worship they devote themselves.

BRACKET. A kind of stay in the form of a knee, or shoulders on which shelves are made to rest; also in Shipbuilding, a kind of knee for the support of the gratings.

BRADS (among Artificers). A kind of nails used in building, which have no heads like other nails, as joiners' brads, flooring brads, batten brads.

BRAIN The soft contents of the cranium or skull, consisting of the cerebrum cerebellum, and medulla oblongata, which are surrounded by three membranes, called meninges, or mats, as the dura mater, pia mater, and arachnoides. The substance of the brain is distinguished into outer and inner; the former is called corticalis, cinerea, or glandulosa; the latter, medullaris, alba, or nervea. It is generally supposed to be the seat of the soul, or that part where all the senses terminate.

BRAN. The husk of ground wheat.

BRANCH. A shoot from the main bough of a tree; also several things similar in figure, as the antlers or shoots of a stag's horn; the branches of veins, branches of a river, branches of a bridle, that is, the two pieces of bended iron that bear the bit-mouth, the chains, and the curb.

BRANCHIÆ. Gills in the anatomy of fishes, organs of respiration answering to the lungs in other animals, with which all fishes are provided, except the cetaceous tribe and the lamprey. They are eight in number, and serve the fish to take in, and throw out water with the air.

BRANCHIOSTEGIOUS. An order of fishes in the Linnæan system, including such as have gills without bony rays, as the pipe fish, sucker, frog fish, &c.

BRANDY. A spirituous and inflammable liquor, made from the lees of wine by distillation. Its constituent parts are water, alcohol, and a little oil or resin. Brandy is said to have been first manufactured in Languedoc

BRANT-FOX A sort of black and red fox

BRASIL WOOD. A sort of wood so denominated because, as is supposed, it was first brought from Brasil. It is red and heavy, so as to sink in water, takes a good polish, and yields beautiful orange and red colours, which are used by dyers. When chewed it has a sweetish taste

BRASS. A factitious compound metal of a yellow colour, consisting of copper and about one third of its weight of zinc

BRAWN. The muscular or fleshy part of the body, particularly that of the boar

BREACH. A gap made in the works of a town by the besiegers.

BREACH (in Law). The violation of a contract; breach of pound, is the breaking any place where cattle are distrained, breach of prison, an escape by breaking out of prison.

BREAD. A light, porous, spongy substance, prepared by fermentation and baking, from the flour of wheat, rye, or barley Wheaten bread is distinguished into white bread, which is made of the

finest flour, and brown bi ·· flour having some of the bran in it

BREAD-FRUIT-TREE The autocarpus of Linnæus, a tree growing in some of the Oceanic islands, so called because the fruit, which is milky and pulpy, supplies the place of bread to the inhabitants. This tree grows to the height of forty feet.

BREAK. A sea term, for that part of a deck where the descent to the next deck below it, commences; in Printing, the short line which ends a paragraph.

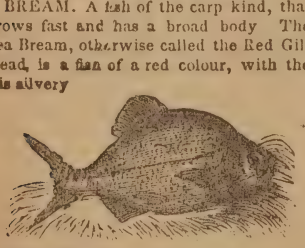
BREAKERS. Billows that break violently over rocks that lie under the surface of the sea.

BREAKING GROUND. A military term, for opening the trenches and beginning the works for a siege.

BREAKING IN The discipline of first training a colt to be useful.

BREAKWATER. The hull of a vessel or any erection of wood or stone, placed at the entrance of a harbour to break the force of the water, such as the Breakwater lately erected in Plymouth Sound, England, and that in Delaware Bay.

BREAM. A fish of the carp kind, that grows fast and has a broad body The Sea Bream, otherwise called the Red Gilt Head, is a fish of a red colour, with the ris silvery



BREAST. The anterior part of the thorax.

BREASTFAST. A sea term, for the large rope employed to confine a ship sideways to a wharf or quay.

BREASTPLATE. A piece of defensive armour worn on the breast; in Horsemanship, a leathern strap running from one side of the saddle, across the horse's breast to the other, to keep it in its place.

BREAST PLOUGH. A sort of plough which is driven forward by the breast, and is used in England in paring off turf from the land.

BREASTWORK. A military term, for works thrown up as high as the breast of the besieged; a sea term, for the balustrade of the quarter deck.

BRECCIA, or PUDDING-STONE. A sort of aggregate earth, consisting of fragments of stones conglutinated. The beautiful pillars in the Representatives Hall in the Capitol at Washington are of this stone.

BREECH The hinder part of a gun, from the cascabel to the bore; also a sea term, for the angle of knee timber in a ship.

BREEDING. That part of husbandry which consists in the rearing of cattle or live stock of different kinds, particularly by crossing or mingling one species or variety with another, so as to improve the breed.

BRESSUMMER A binding interstice or girder to different parts of a house.

BREVET. A military term, for promotion in the army without additional pay.

BREVIARY. A book containing the daily service of the Romish church.

BREWING. The art of making malliquor, such as ale, beer, porter, &c. which much resembles the process of making tea The proper ingredients used in brewing are malt, hops, and water, in certain proportions, according to the required strength of the liquor. Eighteen gallons of good ale and nine gallons of table beer may be drawn from a bushel and a half of malt; but to make strong beer only six gallons are reckoned to one bushel of malt. Among the pernicious and unlawful ingredients used by brewers are an extract of the coculus indicus, hartshorn shavings, ginger, Spanish juice, orange powder, liquorice, caraway seeds and sulphuric acid.

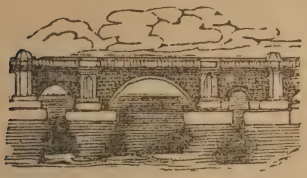
BRIBERY. The receiving of any reward or gift for corrupt purposes.

BRICK. An artificial kind of stone, composed of clay, coal ashes, and sand, ully mingled together, dried by the sun and hardened by the fire. Bricks are distinguished, according to their quality, into marls and stocks, which latter are either gray or red, according to the co our of the earth.

BRICKLAYER. One whose trade is to build with bricks.

BRIDGE. A structure raised over rivers, &c and consisting of one or more arches

The principal parts of a bridge are the piers, or walls, built for the support of the arches; the parapet, or breastwall, made to protect the passengers, the banquet, pavement, or raised footpath, and the abutments or extremities of the bridge, which rest on the banks. The principal arches employed in bridge building are those of the semicircular or elliptica. form. the catenarian arch, and the arch of equilibrium, which last is esteemed to be the best, because it is equally strong in every part.



BRIDGE. A military term, for any contrivance by which soldiers can cross a river, as a bridge of boats, formed by boats joined sideways, and covered with planks; or a bridge of rushes, formed of bundles of rushes bound fast together and covered with planks. Such temporary bridges are called flying bridges.

BRIDGE. The name of several things similar in figure to a bridge, as the bridge of the nose, the gristle which parts the nostrils; the bridge in a violin, &c. the perpendicular arch which supports the strings; the bridge, among Gunners, is the name for the two pieces of timber which go between the transums of a gun carriage on which the bed rests.

BRIDLE. A part of the furniture of a horse's head, which serves to guide the animal. The principal parts are the bitt, or snaffle, which goes into the horse's mouth; the curb, or chain of iron, that runs over the beard of the horse; the headstall, or leather that goes round the head; the fillet, that lies over the forehead; the throatband, that goes under the throat; and the reins, which serve for the rider.

BRIEF (in Law) An abridgment of a client's case, made out for the instruction of counsel on a trial at law; also a license in England to make collections for repairing churches, losses by fire, &c. This last sort of brief is now abolished by statute.

BRIEF (in Music). A measure of quantity, which contains two strokes down in beating time, and as many up

BRIG A small merchant's vessel with two masts.

BRIGADE. A military term, for a party or division of soldiers, whether horse or foot, under the command of a brigadier.

BRIGANTINE. A small light vessel, which can both row and sail well, being adapted either for fighting or for chase

BRIMSTONE. The vulgar name for sulphur

BRINE. Water impregnated with salt.

BRISKET. That part of the breast of an animal that lies nearest the ribs.

BRISTLE. The hair of swine, which is much used by brushmakers, particularly that imported from Russia

BRISTOL HOT WATER. Mineral waters of the lowest temperature of any in England, the constituent parts of which are carbonic acid, gas, lime, and magnesia, besides the muriatic and vitriolic acids

BRITANNIA. The name given by the Romans to the island of Britain, which is represented on their medals under the figure of a female resting her left arm on a shield. Also a species of ware made of block tin.

BROADSIDE. A sea term, for a discharge of all the guns on one side of a ship

BROADSWORD. A sword with a broad blade, chiefly designed for cutting.

BROCADE. A kind of stuff or cloth of gold.

BROCOLI. An Italian plant of the cauliflower kind.

BROGUE. A defective pronunciation of a language, particularly applied to the Irish manner of speaking English.

BROKEN LETTER A term in Printing for the breaking the orderly succession in which the letters stood in a line or page, and mingling them together.

BROKER. One who concludes bargains or contracts for merchants, as exchange brokers, ship brokers &c.

BROKERAGE. What is paid to a broker for his trouble

BROME GRASS. A sort of grass much resembling the oat; whence it has also been called oat grass.

BRONZE. A mixed metal, composed principally of copper, with a small portion of tin and other metals.

BRONZING The art of varnishing wood, plaster, and ivory, so as to give them the colour of bronze

BROOCH. A collar of gold formerly worn about the necks of ladies.

BROOM. A flowering shrub, having a papillionaceous flower, which becomes a short roundish swelling pod, containing a kidney shaped seed in each.

BROOM. A besom, which in England is frequently made of the broom shrub and serves for sweeping a house

BRUTA. The second order of animals of the class mammalia in the Linnæan system, comprehending those animals which have no fore teeth in either jaw, as bradypus, the sloth; mynycophaga, the ant-eater; rhinoceros, the rhinocerus; elephas, the elephant, &c.

BRUTE-WEIGHT A term employed when merchandises are weighed with the cases, &c. in distinction from the net weight.

BUBBLE. A bladder in water, or a vesicle filled with air; also a cheating project, such as the South Sea bubble in 1720, and numerous projects of a similar character which have been set afloat within the last few years, to the ruin of many.

BUCCANEERS. A general name for the pirates, who used to make war on the Spaniards in their West India possessions.

BUCK. A male deer of the fallow kind; also a male rabbit.

BUCKET. A kind of pail made of leather.

BUCKLE. A fastening for a shoe, or the harness of a horse, by means of an iron tongue within a hoop.

BUCKLER. An ancient piece of defensive armour, made of wicker work, and worn on the arm.

BUCKRAM. A sort of stiffened cloth.

BUCKWHEAT, otherwise called BRANK. A sort of grain that is used in England as food for swine. It is much used in America for making a very palatable kind of cakes. It is also preferred for fattening fowls. The flowers grow in a spike, or branched from the wings of the leaves

BUCOLICS. Pastoral poems, so called from the Bucolica of Virgil.

BUD. That part of a plant which contains the embryo of the leaves, flowers, &c.

BUDDHA. The name of a deity among the people of India.

BUDDLE. A frame to receive the mineral ore after it is separated from the coarser parts.

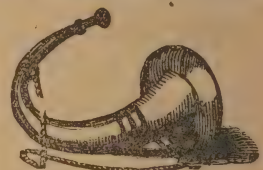
BUDGET. Properly a bag or knapsack that may be easily carried; also, in England, the annual statement of the finances made by the Chancellor of the Exchequer in the House of Commons

BUFF. A sort of thick leather prepared from the skin of the buffalo.

BUFFALO. A wild ox a native of Africa. It is domesticated in Italy and some other countries and used for draught. It has horns resupinated and flat on the fore side, a tough skin, black hair, small head and no dewlap.

BUFFET. A sort of cupboard for plate, glasses, &c.

BUGLEHORN. A horn formerly used much in hunting, and now in the army



BUILDING. The art of raising buildings according to given designs, which is properly practical architecture; also the structure so raised.

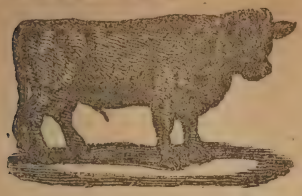
BULBOUS PLANTS. The name of such plants as have a fleshy, scaly root, called a bulb, as the leek, onion, &c

BULGED. A sea term for a ship when she has struck off some of her timbers upon a rock or anchor.

BULK The whole contents of a ship in her hold

BULL The male of cattle, the female

e which is called cow.; when the male is cut he is called an ox.



BULL. A brief or mandate issued by the Pope, and sealed with the bulla, a leaden or gold seal.

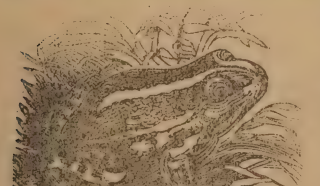
BULL-DOG. A dog of true English breed, so called from his property of attacking the bull, whence he was formerly used in the cruel sport of bullbaiting.

BULLET. A name for the leaden balls with which small fire arms are loaded.

BULLETIN. In Europe an official account of public transactions, or matters of general interest, as the state of the king's health, &c.

BULLFINCH. A small European bird of a cinereous colour, having its head and wings black, and coverts of the tail white. It is easily tamed, and may be taught to speak.

BULL-FROG A remarkable species of ne frog in North America, so called be-



ause its voice esembles the distant low-ag of an ox.

BULLFIGHT A cruel sport in Spain and Portugal, where wild bulls are encountered by men on horseback.

BULL-HEAD. A sort of fish, having its head much broader than its body

BULLION. Gold or silver in the mass before it is wrought into coin.

BULL'S EYE. A mark in the shape of a bull's eye, at which archers shoot by way of exercise.

BULL-TROUT. A sort of salmon about two feet in length

BUM-BOAT. A sort of wherry used about harbours, to carry provisions, &c for sale, to ships lying at a distance.

BUNT (a Sea Term). The middle part of a sail formed into a sort of bag, or hollow, that the sail may gather more wind.

BUNTLINES. Small lines which serve to force up the bunt of the sail, for the better furling it up.

BUOY. A short piece of wood or close hooped barrel fastened by a rope to the anchor, to point out its situation. It is also a piece of wood or cork fastened by a chain, serving to point out dangerous places in or near a harbour

BUPHAGA, or BEEFEATER. A sort of bird of the order picæ, found in Africa. It is so called because it alights on the backs of cattle, and picks holes in them to get at the larvæ of the gad-fly, on which it lives.

BUPRESTIS. An insect of the coleopterous order, remarkable for the brilliancy of its colours, which emulate the polish of the finest metals

BURDEN (a Sea Term). Whatever can be stowed in a hold, or the number of tons which it can carry. Beasts of burden, in Husbandry, are those which are fitted for bearing burdens, or drawing weights.

BURGAGE (in Law). In England a kind of tenure by which the inhabitants of cities or boroughs held their lands or tenements of the king.

BURGESS. In England an inhabitant of a borough, or one who possesses a tenement therein; it is now more commonly taken for the representative of a borough town.

BURGLARY (in Law). The breaking and entering the dwelling of another in the night, with the intent to commit some felony, whether the felonious intent be put in execution or not.

BURGUNDY PITCH The juice of the

fir tree boiled in water, and strained through a linen cloth.

BURNING-GLASS. A concave or convex glass, commonly spherical, which collects the rays of the sun towards a common point, called the focus. The burning glass of M. de Villette was three feet eleven inches in diameter, and it burnt at the distance of three feet two inches; by it were melted a silver sixpence in seven minutes and a half; a King George's halfpenny in sixteen minutes, which ran in thirty-four minutes; a diamond weighing four grains lost seven-eighths of its weight. That of Buffon was a polyhedron, six feet broad, and as many high, consisting of one hundred and sixty-eight small mirrors, or flat pieces of looking-glass, each six inches square, by means of which, with the faint rays of the sun in the month of March, he set on fire boards of beech wood at one hundred and fifty feet distance.

BURNING OF WOMEN. A superstitious practice in Hindostan, for the widows to burn themselves on the funeral piles of their husbands.

BURNISHER. A round polished piece of steel, serving to smooth and give a lustre o metals.

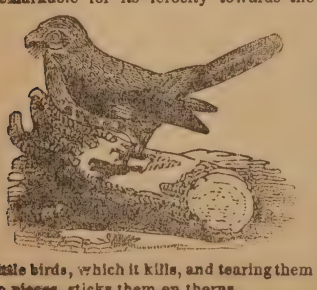
BUSHEL. Dry measure, containing four pecks, or eight gallons.

BUSH-HARROW. An implement of husbandry for harrowing grass lands, and covering grass or clover seeds. It consists of a frame with three or more bars, in which bushes are interwoven

BUSKIN. A kind of high shoe, anciently worn by tragedians: also a sort of leather stocking serving the purpose of a boot.

BUSTARD. A species of European bird of which there are several varieties. The Great Bustard is the largest land bird known in England. It seems to bear a remote affinity to the Ostrich.

BUTCHER BIRD. A sort of shrike remarkable for its ferocity towards the



little birds, which it kills, and tearing them to pieces, sticks them on thorns.

BUST. The figure or portrait of a person in rellevo, showing only the upper parts of the body.

BUTT. A measure of wine, containing 126 gallons.

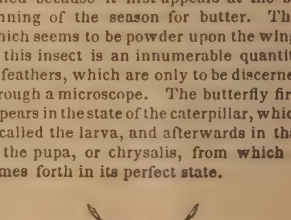
BUTTEND. The largest end of a piece of timber nearest to the root.

BUTTER. A fat unctuous substance, procured from the cream of milk by churning, a term in Chemistry for substances of similar consistency, as butter of antimony, butter of bismuth, butter of wax, &c.

BUTTERBUR. A plant with a floscular flower, consisting of many florets.

BUTTERFLOWER. A yellow flower, which abounds in the meadows in May.

BUTTERFLY. A beautiful insect, so called because it first appears at the beginning of the season for butter. That which seems to be powder upon the wings of this insect is an innumerable quantity of feathers, which are only to be discerned through a microscope. The butterfly first appears in the state of the caterpillar, which is called the larva, and afterwards in that of the pupa, or chrysalis, from which it comes forth in its perfect state.



The larva. The chrysalis

BUTTOCK. The breech or naunch of an animal, next to the tail: also a sea term for that part of a ship which forms her breadth, right astern from the tuck upwards.

BUTTON. Any thing in a round form which serves to fasten, particularly what is used in garments; also a part of the cascabel in a gun or howitzer, which is in the form of a button.

BUTTRESS. A kind of butment, built archwise, serving to support a building or wall.

BUZZARD A very sluggish bird of the hawk kind. The Turkey Buzzard known in the southern parts of the United States is a species of Vulture

BY-LAW. A private law made within some particular place or jurisdiction.

## C.

C, the third letter and second consonant of the alphabet; as a numeral, C stands for 100, and CC for 200, &c.; in Music, it is the highest part in the thorough bass; as an Abbreviation it stands for Christ, as A. C. Anno Christi, or ante Christum; also for Companion, as C. B. Companion of the Bath.

CAABA. An Arabic term for the house of God, a part of the temple of Mahomet in Mecca.

CABALA. A traditional or mysterious doctrine among the ancient Jews, which they say was delivered by word of mouth to Moses, and by him to the fathers. Among Christians, the cabala is an abuse of certain passages of Scripture for magical purposes.

CABBAGE TREE. A tree of the Cape of Good Hope, so called from the resemblance which its leaves bear, to those of the cabbage plant.

CABIN. The apartment in a vessel for the officers and superior passengers.

CABINET In England, the closet or private room in the king's palace, where councils are held; also the ministers of the king, who are summoned to attend such councils. In the United States, the term is applied to the four secretaries and the attorney general at Washington, considered as counsellors of the President.

CABLE. A sea term for a strong rope, which serves to keep a ship at anchor.

CABLE'S LENGTH. The measure of 120 fathoms.

CACOETHES. An ill habit or propensity; as the cacoethes scribendi, an itch for authorship.

CACOPHONY A bad tone of the voice, proceeding from the ill disposition of the organs.

CADENCE (in Grammar). The fall of the voice; also the flow of verses or periods; in Music, it is a pause or suspension at the end of an air, resembling points or virgules in prose; in Dancing, cadence is used when the steps follow the notes and measures of the music; in the Manege the cadence is the measure or proportion observed by a horse in all his motions, when he is thoroughly managed.

CADET. One who is trained up for the army by a course of military discipline; such as the cadets at the military college at West Point.

CADETSHIP The commission given to a cadet, to enter the East India Company's service in England.

CADI. A magistrate, or sort of justice of the peace, among the Arabs and Turks

CADMIA. A sort of mineral among the ancients, now called cobalt.

CADUCEUS. A name for Mercury's rod or sceptre, which on medals is an emblem of peace. It was carried by the Roman heralds when they went to proclaim peace.

CÆSAR A title or name given to the twelve emperors of Rome, who succeeded Julius Cæsar.

CAGMAG. Old geese are so called, which are sent up to the London market for sale.

CAIRNS. Heaps of stones in a conical form, which are frequently to be met with in Scotland and Wales.

CAISSON. A wooden chest filled with bombs or powder, and buried under some work to blow it up; also the frame used in laying the foundations of a bridge

CALAMANCO. A kind of woollen stuff manufactured in England and Brabant. It has a fine gloss, and is chequered in the warp.

CALAMARIÆ. The third natural order of plants in the Linnæan system, containing the reeds resembling grasses

CALAMINARIS, or LAPIS CALAMINARIS. The calamine stone, an oxyde of zinc among the chymists; a kind of bituminous fossile earth, which, when mixed with copper, produces brass.

CALCAREOUS. The third order of the class earths in the system of Gmelin, consisting of chalk, limestone, spar, gypsum, marble, marl.

CALCINATION The solution of a mixed body by the means of heat or any corroding substance, as mercury, aquafortis, &c., whereby it is reduced to powder The body so reduced was named a calx, in common language a cinder, and in chymistry an oxide.

CALCULATION The act of computing

several sums by means of addition, subtraction, multiplication, division, &c.

CALCULUS, or STONE. A name generally given to all hard concretions, not bony, which are formed in the bodies of animals.

CALENDAR. A distribution of time into months, weeks, and days throughout the year, together with an account of the festivals, and other such matters as serve for the daily purposes of life. Calendars vary according to the different forms of the year, and the divisions of time in different countries, as the Roman and Julian Calendars used by the Romans, the Gregorian and Reformed Calendars among the moderns.

CALENDAR MONTH. The name given to the months as they stand in the almanac.

CALIBER. The thickness or diameter of any thing, particularly of the bore of a cannon

CALIBER COMPASSES. A particular instrument used by gunners for measuring the diameters of shot, shells, &c. They resemble other compasses, except in their legs, which are arched, in order that the points may touch the extremities of the arch.

CALICO A kind of cloth made of cotton, originally made in the East Indies. It is so called from Callicut, a town on the coast of Malabar, where it was first manufactured. The manufacture of calicoes has been successfully introduced into the United States.

CALICO PRINTING. The art of dying cotton, linen, and other cloths topically; that is by printing figures here and there in different colours, and leaving some parts of the cloth without any figures.

CALIPH, in the Arabic KHALIFA, which signifies successor A title assumed by the successors of Mahomet, who reigned in Bagdad.

CALKERS. Persons employed in calking vessels; that is, driving oakum and other things into the seams of vessels, to keep out the water.

CALL. An artificial pipe made to catch quails; also a sea term for a whistle or pipe, used in calling the sailors to their duty.

CALL OF THE HOUSE. In England, a parliamentary term for an imperative call or summons sent to every member to attend on a particular occasion.

CALOMEL. Mercury well pounded with sulphur; it is also called a muriate of mercury

CALORIC A modern term for fire, or that principle which produces the sensation of heat, which is supposed to be something independent of the body in which it is found.

CALVARY The name of a cross in Heraldry, as it is borne in coats of arms It is so called because it resembles the cross on which our Saviour suffered.

CALVINISM. The doctrines of Calvin, the Geneva reformer, and his adherents, on predestination, reprobation, &c.

CALUMET. An Indian pipe, which was otherwise called the Pipe of Peace, because it served the bearer as a pass or safe conduct among the neighbouring tribes of Indians. It was very similar to the caduceus, or Mercury's wand, of the ancients.

CALX. A fine powder remaining after the calcination of metals and other mineral substances; also another name for lime.

CALYCIFLORÆ. The sixteenth natural order of plants in the Linnæan system, comprehending those plants which have only a calyx, in which the stamina are inserted.

CALYPTRA. The tender skin in mosses that loosely covers the top of the theca, like a cup.

CALYX. A general name for the cup of a flower, or that part of a plant which surrounds and supports the other parts of a flower.

CAMBERED. A sea term, applied to a deck, the flooring of which is highest in the middle.

CAMBRIC. A sort of very fine white linen, made of flax. Fabrics of cotton made in imitation of this are also called cambric.

CAMEL. A well known quadruped, remarkable for its swiftness and its power of subsisting for many days without water It is mild and gentle, unless particularly provoked, patient of hunger, and capable of carrying great burdens. The flesh and milk of this animal constitute the principal food of the inhabitants of Arabia and the countries of which it is a native. The Arabian camel, which is otherwise called a dromedary, has but one hunch, the Bactrian camel has two. This latter species is

ased in the more northern parts of central Asia. The rabian species is generally used in the warmer parts of Asia and Africa. This animal is borne in coats of arms.

CAMELOPARD or Giraffe. A remarkable animal found only in the middle and southern regions of Africa. It is the tallest of all animals, being about 17 feet nigh. It feeds on the tops of trees. It is very timid but defends itself, when attacked, by kicking. It is capable of putting out its tongue to the length of 17 inches, and this is so flexible that it may be reduced at the point so as to pass through a lady's ring.

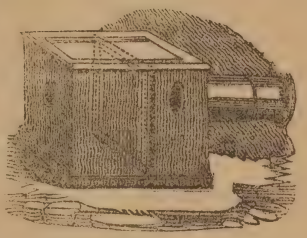
CAMBIUM. The mucilaginous fluid which lies between the young wood and the bark of a tree.

CAMBRIAN. In geology, a term to designate the lowest fossiliferous rocks as developed in Wales and their equivalents in other countries.

CAMEO. A sort of onyx stone, having various figures upon it; in Natural History, a sort of pellucid gem.

CAMERA LUCIDA. An optical instrument invented by Dr. Hook, for the purpose of making the image of any object appear on the wall in a light room, either by day or night. This name has since been applied to an instrument invented by Dr Wollaston, for drawing objects in true perspective.

CAMERA OBSCURA. An optical machine or apparatus, representing an artificial eye, by which the images of external objects, received through a double convex glass, are shown distinctly, and in their native colours



CAMLET A sort of stuff originally made of camel's hair and silk mixed, but now of wool and silk.

CAMP. The spot of ground where an army rests and intrenches itself.

CAMPAIGN. The space of time during which an army is kept in the field.

CAMPANACEÆ. One of Linnæus's natural order of flowers, including those that are bell-shaped, as the campanula, convolvulus, &c.

CAMPANULA, or Bell Flower A sort of plants, mostly perennials, and bearing a bell-shaped flower.

CAMPHOR. A white concrete crystalline substance, of an acrid bitter taste, and a penetrating smell. It was formerly supposed to be a resin which was procured from a tree, much like a walnut tree growing in Borneo, and thence called the camphor tree; but modern chymists consider it to be a peculiar substance not to be classed either with the oils or the resins. It is procured from the volatile oil of several plants, as rosemary, sage, lavender, &c.

CAN. A drinking vessel; particularly that used by sailors.

CANAL. An artificial river, provided with locks and sluices, and sustained by banks and mounds.

CANARY BIRD. A singing bird of a greenish colour, formerly bred in the Canaries, and nowhere else. These birds are now bred in all parts of Europe and Ameri

ca, and their colours are various shades of yellow and green.

CANCELLATION (in Law). Expunging the contents of a deed or instrument, by striking two lines through it.

CANCER, the Crab (in Astronomy). A constellation, and the fourth sign in the zodiac, marked thus ♋, which the sun enters on the twenty-first of June, thence called the summer solstice.

CANCER, Tropic of. A small circle of the sphere, parallel to the equator, and passing through the beginning of Cancer.

CANCER (in Medicine). A hard ulcerous and exceedingly painful swelling, and generally seated in the glandulous part of the body.

CANDLE. A long roll or cylinder made of tallow, wax, or spermaceti, in which is included a wick of cotton or rush, for the purpose of burning. Good tallow is made of the fat of sheep and bullocks in equal portions. The wick, which is made of several threads of cotton twisted together, must be fine, sufficiently dry, and properly twisted, or otherwise the candle will yield an unsteady light. The tallow is prepared by chopping the fat and boiling it in a copper. the scum which is taken from it in the boiling is called greaves, which is made into cakes that are sold for fatting poultry. Candles are made either by dipping or in moulds, the former of which are the common candles. When candles are to be dipped, the workman holds three of the broaches, with the cottons properly spread, between his fingers, and dips them into the tallow vat, then hangs them to cool, and when cooled dips them again and again until they are of the required size. The mould in which mould-candles are made is mostly of pewter, made to the diameter and length of the candle wanted; at the extremity of it is the neck, which is pierced to receive the cotton, one end of which comes out at the neck, and the remainder is placed in the mould in such manner in a perpendicular direction, as that it should be in the middle of the candle; after this the mould is filled with boiling tallow, and left to cool. Wax candles are made by pouring with a ladle melted wax on the tops of a number of wicks, tied by the neck at equal distances round an iron circle suspended directly over a large basin of copper tinned.

CANDLEMAS DAY. The festival observed on the second of February, by Catholics and Episcopalians, in commemoration of the purification of the Virgin Mary.

CANDY A preparation of sugar made by melting and crystallizing it several times.

CANDYTUFT. An annual that is cultivated in gardens, bearing a white or purple flower.

CANE. A kind of strong Indian reed used for walking sticks; also the plant which yields the sugar, and grows freely in the East and West Indies and parts of North and South America The skin of the sugar cane is soft, and the spongy matter or pith it contains, very juicy. It is now extensively cultivated in Louisiana, and Alabama.

CANE (in Commerce). A long measure of different dimensions in different countries, from two to five yards.

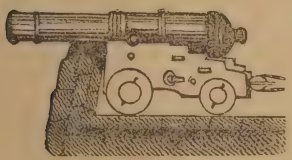
CANIS (in Astronomy). The name of two constellations in the southern hemisphere; namely, Canis Major and Canis Minor

CANKER A cancerous affection which occurs frequently in fruit trees; also a fungous excrescence in the feet of horses

CANNIBAL. A man eater

CANNON. A piece of ordnance, a great gun for a battery, which is mounted

on a carriage: the principal parts of a cannon are the muzzle, or mouth, the entrance of the bore or the hollow part which receives the charge; the chase, or the whole space from the muzzle to the trunnions; the trunnions, or two solid cylindrical pieces of metal, which project from the piece, and by which it is supported on the carriage, the vent, which in small firearms is called the touchhole, a small hole pierced at the end of the bore or chamber, for the purpose of priming the piece with powder, or to introduce the tube in order, when lighted, to set fire to the charge; the chamber, that part of the bore or hollow of the piece where the powder is lodged which forms the charge; the breech, the solid piece behind, the hindermost part of which is called the cascabel. That part next to the breech is called the reinforce, which is made stronger to resist the force of the powder. The ornaments of a cannon are the muzzle, astragal, and fillets, the chase astragal and fillets, the reinforce ring, and the breech mouldings The first cannon was used in 1304, on the coast of Denmark



CANOE. A little vessel or boat used by the Indians, which is made all of one piece, of the trunk of a tree hollowed.

CANON. A law, or ordnance of the church. The Canon Law consists of rules drawn from Scripture, from the writings of the ancient fathers, from the ordinances of councils, and the decrees of the pope.

CANON. A dignity in a cathedral church.

CANON OF SCRIPTURE. That body of books of the Holy Scripture which serves for a rule of faith and practice

CANONIZATION. The act of enrolling any one among the number of the saints, which is the practice of the Romish church, and performed by the pope.

CANOPUS (in Astronomy). A bright star of the first magnitude, in the rudder of the ship Argo

CANTATA. A piece of music for one, two, or more voices, chiefly intended for a single voice with a thorough base.

CANTEEN. A suttling house for both officers and men: also a small vessel of tin plate or wood, in which soldiers on their march carry their liquor.

CANTERBURY-BELL. A fine flower much cultivated in gardens. The plant is biennial, and the flower is white or blue, and of an oblong figure.

CANTHARIDES, or SPANISH FLIES. A species of shining beetle, powdered and used for raising blisters.

CANTON. A division or small parcel of a country, such as the cantons of Switzerland.

CANTON (in Heraldry). An ordinary, so called because it occupies but a cantel or corner of the escutcheon.

CANVAS, or CANVASS. The cloth on which painters usually draw their pictures; and also that of which the sails of vessels are made.

CAP. In general, any covering for the head; sometimes of a particular make, as a cardinal's cap.

CAP. The name of several things similar in figure or use, as the cap of a great gun, a piece of lead laid over the touchhole; the cap in a ship, the square piece of timber placed over the head of a mast

CAP (in Architecture). The uppermost part of any member, as the capital of a column, the cornice of a door, &c.

CAP OF MAINTENANCE (in Heraldry). One of the regalia or ornaments of state, carried before the king of Great Britain at the coronation and other great solemnities.

CAPE (in Geography). A promontory or headland projecting into the sea farther than the rest of the coast, as the Cape of Good Hope, Cape St. Vincent, &c.

CAPELLA. A star of the first magnitude in Auriga.

CAPER-BUSH. A shrub or tree, the bud or flower of which is converted into a pickle called caper.

CAPILLARY. An epithet for what is as fine as a hair. Capillary tubes are pipes of the fineness of a hair, by which various phenomena in physics and hydrostatics are displayed. Capillary vessels, in Anatomy, the smallest and extreme parts of the minutest ramifications of the veins and arteries.

CAPITAL. The chief or head of a thing.

CAPITAL (in Geography). The chief town.

CAPITAL (in Architecture). The uppermost part of a column, serving as the head.

CAPITAL (in Printing). The large letters, which serve as initials, or in titles

CAPITAL (in Commerce). The stock or fund of a trading company

CAPITOL. The building at Washington in which Congress meets. It is beautifully situated on a hill and is by far the most splendid edifice in America.

CAPITULATION. A treaty between the besieged and the besiegers of any place, whereby the former surrender it, and themselves, on certain conditions.

CAPIVI. A tree of Brazil, the flower of which resembles a rose. It grows to the height of sixty feet.

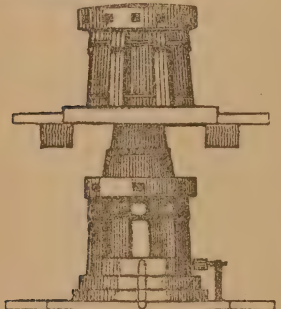
CAPRICORN. A southern constellation, and one of the twelve signs of the zodiac, which the sun enters on the 21st of December. It is marked thus, ♑.

CAPRICORN, TROPIC OF. A small circle of the sphere, parallel to the equinoctial, passing through the beginning of Capricorn or the winter solstice, which is the sun's greatest southern declination, namely, 23 degrees and a half.

CAPRIOLE. A caper or leap in dancing, like a goat's leap.

CAPSICUM. A plant, native of South America, the fruit of which is a pod, and the strongest kind of pepper, known by the name of Cayenne Pepper.

CAPSTAN. A large piece of timber resembling a windlass, placed behind the mainmast. It is a cylinder with levers, used to weigh anchors, to hoist up or strike down topmasts, &c



CAPTAIN. A commander of a company of foot or a troop of horse; and in the naval or merchant service, the commander of a vessel: also in grammar schools in England the head boy of his class.

CAPTION (in Law). The act of taking any person by any judicial process.

CAPUCHIN. An order of Franciscan monks in the Romish church, so called from their capuch or hood sewed to their habits.

CAPUT MORTUUM. The inert residuum of any body, remaining after all the volatile and humid parts have been extracted

CAR. A small carriage of burden, drawn by one or two horses.

CARABINE, or CARBINE. A sort of short gun, between a musket and a pistol, having its barrel two feet and a half long.

CARACAL. An animal resembling the Lynx, found in the hot climates of Asia.

CARACT, or CARAT. The weight of 24 grains; or one scruple 24 carats make one ounce. This is the standard weight by which the fineness of gold is distinguished. If the gold be so fine that, in purifying, it loses nothing, or but very little, it is said to be gold of 24 carats; if it lose one carat, it is said to be gold of 23 carats.

CARAT (in weighing of Diamonds, &c.) A weight of four grains.

CARAVAN. A company of merchants or pilgrims in Asia or Africa, who go in an organized body through the deserts.

CARAVANSERA. A large building in the East, or an inn for the reception of travellers and the caravans. The building commonly forms a square, in the middle of which is a spacious court, and under the arches or piazzas that surround it, there runs a bank, raised some feet above the ground, where the merchants and travellers take up their lodgings, the beasts of burden being tied to the foot of the bank.

CARBON. The pure inflammable part of charcoal, free from all the hydrogen and earthy or metallic particles which charcoal usually contains. By its union with oxygen, it produces two gaseous substances, the first of which was formerly called fixed air, now carbonic acid; and the second, containing less oxygen, the oxide of carbon.

CARBONATES. Salts formed by the combination of carbonic acid with different bases, as carbonate of copper, &c.

CARBUNCLE. A precious stone, of the colour of a burning coal.

CARBURET. A substance formed by the combination of carbon with metals.

CARCASS (in Building). The shell or timber work of a house before it is lathed and plastered, or the floors laid; in Gunnery, an iron case, filled with combustible materials, and discharged from a mortar after the manner of a bomb

CARD. An instrument like a comb, which is used in combing or disentangling wool

CARD OF A COMPASS. The circular paper on which the points of a compass are marked.

CARD. See CARDS.

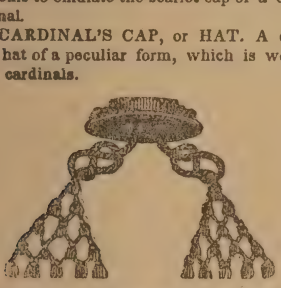
CARDIACS Medicines that tend to strengthen the heart.

CARDINAL. A dignitary in the Romish Church, and one of its chief governors, of which there are seventy in number They constitute a college, by and from whom the pope is chosen

CARDINAL POINTS. The four points or divisions of the horizon, namely, the north, south, east, and west.

CARDINAL'S CAP, or CARDINAL FLOWER. A plant so called because its flower, by the intense redness of its colour, seems to emulate the scarlet cap of a cardinal.

CARDINAL'S CAP, or HAT. A cap or hat of a peculiar form, which is worn by cardinals.



CARDINAL VIRTUES. The four virtues of prudence, temperance, justice, and fortitude.

CARDS. Pieces of pasteboard of an oblong figure, and different sizes, made into packs of 52 in number, and used by way of amusement in different games. They are painted with various figures, namely, hearts, spades, diamonds, clubs, and kings and queens. They are said to have been introduced in the fourteenth century, to divert Charles VI. king of France, who had fallen into a state of melancholy. By the hearts, cœurs, were meant the gens de choeur, choirmen or ecclesiastics, instead of which the Spaniards use chalices. The spades, in Spanish espadas, swords, were intended to represent the nobility, who wore swords or pikes. The diamonds, or carreaux, designated the order of citizens or merchants. The trefle, trefoil leaf or clover grass, was an emblem of the husbandman; this is called clubs with us, because the Spaniards have bastos, clubs, on their cards. The knaves represent the servants of the knights. The four kings were intended for David, Alexander, Cæsar, and Charlemagne, who established the four great monarchies of the Jews, Greeks, Romans, and Franks. The four queens were supposed to represent Argine, i. e. regina, the queen by descent, Esther, Judith, and Pallas. The moulds or blocks used for making cards were exactly like those which were shortly afterwards used in the making of books

CAREENING. The heaving a ship on one side, for the purpose of clearing or calking the other side.

CARGO (in Commerce). The merchandise and effects that are laden on board a ship

CARICATURE (From the Italian Caricatura). A distorted way of representing objects, so as to make them appear ridiculous.

CARIES. A disease of the bones; a kind of rottenness.

CARINA. A keel; the name given by Linnæus to the lower concave petal of a papilionaceous or butterfly-shaped flower, as the pea, which resembles the keel of a ship in its shape.

CARLINE THISTLE. A plant of the thistle kind, which is sometimes used medicinally.

CARLINGS. Short pieces of timber which serve to support and strengthen the larger beams in a ship.

CARMAN. One who is employed in carrying goods from the wharfs to the merchant's warehouses.

CARMELITES. An order of monks who were first founded on Mount Carmel.

CARMINATIVES. Medicines which expel wind.

CARMINE. A dross or powder of a deep red colour, procured from cochineal, and used for painting in miniature

CARNATION. A beautiful sort of clove pink, having its bright colours equally marked all over the flowers.

CARNATION (in Painting) The flesh colour.

CARNIVAL, or CARNAVAL. A season of mirth and festivity, particularly observed by the Italians and generally by Catholics from Twelfth Day until Lent.

CARNIVOROUS. An epithet applied to animals that feed on flesh.

CAROTIDS. Two arteries in the neck, which convey the blood from the aorta to the brain

CARP. A fresh-water fish fitted for stocking ponds, as it spawns three times a year.

CARPENTER'S RULE. A tool generally used in taking dimensions, and casting up the contents of timber and the artificer's work.

CARPENTRY. The art of cutting, framing, and joining large pieces of wood for the uses of building: it is subservient to architecture, and is divided into House Carpentry and Ship Carpentry Carpen

try differs from joining only inasmuch as the work is coarser, larger, and not so curious.

CARPET. A sort of stuff wrought either with the needle or the loom, and used as a covering for the floor. Persian and Turkish carpets are most in esteem.

CARRIAGE. In general, a vehicle for carrying goods and persons; in Gunnery, the machine upon which the gun is mounted; in Carpentry, the frame of timber-work which supports the steps of wooden stairs.

CARRIERS. All persons carrying goods for hire; also a sort of pigeons that are used in conveying letters to a distance.

CARROT. A fleshy root, cultivated as a garden vegetable.

CART. A small carriage with two wheels, used in husbandry.

CART-HORSE. An inferior kind of horse, used in husbandry.

CARTE BLANCHE. A blank paper, delivered to a person to be filled up as he pleases; applied generally in the sense of unlimited terms granted to a person.

CARTEL. An agreement between two states at war for the exchange of prisoners.

CARTILAGE. A part of the animal body, harder and drier than a ligament, and softer than a bone; its use is to render the articulation of the bones more easy.

CARTILAGINOUS FISHES. Those having cartilaginous instead of bony skeletons.

CARTOON. A design made on strong paper, to be afterwards calked through, and transferred to the fresh plaster of a wall to be painted in fresco, such as the famous cartoons of Raphael now in the palace of Hampton Court, England.

CARTOUCH. A case of wood holding about four hundred musket balls, besides iron balls, from six to ten, to be fired out of a howitzer

CARTOUCHES. Blocks or modillions used in the cornices of wainscoted apartments; also ornaments representing a scroll of paper.

CARTRIDGE. A case of paper or parchment filled with gunpowder, and used in the charging of guns

CARVEL. A small ship or fly-boat.

CARVING The art of cutting wood into various forms and figures.

CARYATIDES (in Architecture). A sort of columns or pillars shaped like the bodies of women, and in the dress of the Carian people. They were intended to represent the Carian women who were taken captives by the Athenians

CARYOPHYLLEÆ A natural order of plants, consisting of such as have pink like flowers.

CASE. Any outside covering which serves to enclose a thing entirely, as packing cases or knife cases; in Carpentry, the case of a door is the wooden frame, in which it is hung; in Printing, it is a frame of wood, with numerous small partitions for the letters.

CASE (in Grammar). An accident of nouns which have different inflexions or terminations.

CASE-HARDENING. A method of preparing iron, so as to render its outer surface hard, and capable of resisting any edged tool.

CASE-KNIFE. A large kitchen-knife.

CASEMENT. A window that opens on hinges

CASE-SHOT. Musket balls, stones iron, &c put into cases and shot out of great guns.

CASH. Ready money, distinguished from bills.

CASHEW CURASSOW. A bird about the size of a hen turkey found in Jamaica and the northern parts of South America. (See Curassow.)

CASHEW-NUT. The fruit of the cashew, that abounds in Jamaica and Barbadoes. From this nut is expressed a juice that is made into a pleasant wine

CASHIER. The keeper of the cash or money, which it is his business to receive and pay.

CASHIERS OF THE BANK Officers of the Bank who sign the notes that are issued out.

CASHIERING. A dishonourable dismissal of an officer or soldier from the service

CASHMERE. A country in India

which gives name to a valuable kind of cloth, and costly shawls manufactured there from the wool of a species of goat peculiar to Thibet.

CASSAVI. An American tree, bearing a bell-shaped flower Its root, when dried and ground to flour, was converted into bread by the original inhabitants.

CASSIA FISTULA, or Pudding Pipe Tree A very large tree, a native of Alexandria and the West Indies, which bears a long cylindrical taper or flat pod, divided into many cells, in each of which is a hard seed lodged in a clammy black substance, which is purgative, and is known in medicine by the name of the Purging Cassia, or, simply, Cassia.

CASSIOPEIA. A northern constellation.

CASSIQUE, or CACIQUE. A sovereign lord among the ancient Americans.

CASSOCK. A vestment worn by clergymen under their gowns.

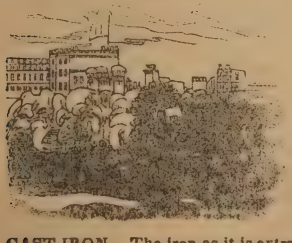
CASSOWARY. A large bird of the ostrich kind, found only in Java, and the Asiatic Islands. It is second in size only to the Ostrich

CAST. The name of figures or small statues in bronze.

CASTE. The name of different tribes in Hindostan, of which the Brahmins is the most noble. The second is that of the soldiers, the third, that of merchants and husbandmen, the fourth that of laborers in various employments.

CASTING (among Sculptors). The taking of casts or impressions of figures, busts, &c.; in a foundery, the running of metals into any mould prepared for this purpose.

CASTLE. A fortress or place rendered defensible by nature and art. Castles, being an emblem of grandeur, are frequently borne in coats of arms.



CAST IRON. The iron as it is extracted from the ores by means of casting.

CASTOR. A soft, grayish yellow substance found in the bags of the beaver, near its groin. In a warm air, the caste grows by degrees hard, brittle, and of dark colour.

CAT. A well known animal nearly allied to the tiger, is either domestic or wild. The wild or mountain cat, is borne in coats of arms as an emblem of liberty, vigilance, and forecast.

The animals of the cat family known in North America, are the Congar, vulgarly called Panther; the wild cat, or catamount, an animal three times the size of the domestic cat, and having a short tail; and the Lynx. The domestic cat is a tame variety of the European cat. It is not a native of this country.

CAT. A sea term for a ship usually employed in the coal trade; also a sort of strong tackle for drawing up the anchor; also a military term for a kind of shed under which soldiers conceal themselves while filling up a ditch or mining a wall.

CATACOMBS. Grottoes or subterraneous places for the burial of the dead, frequently found in Egypt and in Italy.

CATALOGUE. A list of books or any other matters, arranged in order, for purposes of sale or reference

CATAMARAN. A sort of floating raft originally used in China as a fishing boat

CATARACT. A high, steep place or precipice in the channel of a river, caused by rocks or other obstacles stopping the course of the stream. Niagara is the most stupendous cataract in the world. Also a disease in the eye, arising from a little film or speck, which swimming in the aqueous humour, and getting before the pupil, causes a dimness of sight or blindness.

CATARRH. A defluxion from the head occasioned by cold.

CAT BIRD. A bird common in the United States of a bluish gray colour which makes a noise very similar to the mewing of a cat. It is a pretty good singer; its song consists of imitations of the notes of other birds.

CAT-CALL. A harsh sort of pipe, imitating the noise of a cat

CATCH (in Music). A short and humorous song; also a sea term for a swift-sailing vessel.

CATCH-FLY. A plant much cultivated in gardens, having grass-like leaves, and a long stalk terminated by a cluster of crimson flowers.

CATECHISM. A short system of instruction in religion, conveyed in question and answers. It is frequently applied to other subjects.

CATECHU. A juice of a very astringent quality, pressed from out of several Indian fruits.

CATECHUMENS. A name formerly given in the Christian church, to such as were prepared to receive the ordinance of baptism.

CATEGORY (in Logic). A name for the predicates or attributes contained under any genus, of which Aristotle reckons ten, namely, substance, quantity, quality, relation, acting, suffering, time, place, situation, and habit.

CATENARY. A curve on a crooked line formed by a rope when hanging.

CATERER. A provider of victuals and other necessaries in the king's household, or elsewhere.

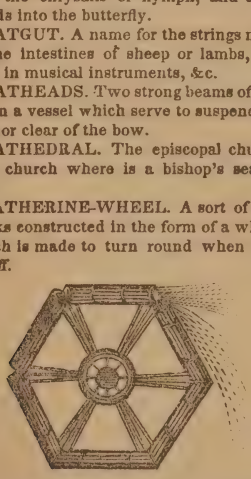
CATERPILLAR. The larva produced from the egg, which is transformed first into the chrysalis or nymph, and afterwards into the butterfly.

CATGUT. A name for the strings made of the intestines of sheep or lambs, and used in musical instruments, &c.

CATHEADS. Two strong beams of timber in a vessel which serve to suspend the anchor clear of the bow.

CATHEDRAL. The episcopal church, or a church where is a bishop's seat or see.

CATHERINE-WHEEL. A sort of fireworks constructed in the form of a wheel, which is made to turn round when it is let off.



CATHERINE-WHEEL (in Architecture). A large circular ornament in Gothic windows.

CATHOLIC An epithet properly signifying universal; which the Romish church assumes to itself as its title; whence the name of Roman Catholics has been applied, since the Reformation, to the followers of the Romish doctrine and discipline.

CATHOLIC KING. The title of the king of Spain.

CATHOLIC PRIEST. A clergyman or priest ordained to say mass and administer the sacraments, &c, according to the rites of the Romish Church.

CATKIN, or AMENT (in Botany). A long stem thickly covered with scales, under which are the flowers and the essential parts of the fruit, which is so called from its resemblance to a cat's tail. Catkins are to be found on the hazel, willow, &c.

CAT'S EYE (in Mineralogy). A stone of a glistening gray, with a tinge of green, yellow, or white.

CAT'S HEAD. A very large kind of apple.

CAT'S-TAIL GRASS. A kind of reed, bearing a spike, like the tail of a cat.

CATTLE. Horned beasts, that feed in pasture, or generally all four-footed beasts that serve for domestic purposes, including horses, horned cattle and sheep. In England horses and cows are called black cattle.

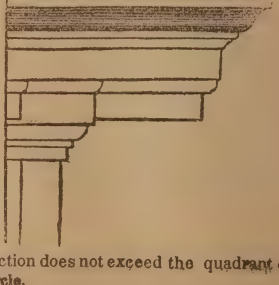
CAVALCADE. A pompous procession of horses and carriages, &c.

CAVALIER. A horseman; a person mounted on a horse, or expert in horsemanship; in Fortification, a work raised within the body of a place, above the other works.

CAVEAR, or CAVIAR. The spawn or hard roes of sturgeon, made into cakes, salted and dried in the sun, much used in Russia and other parts of the continent.

CAVERN. A natural cave or hollow place, in a rock or mountain.

CAVETTO (in Architecture). A concave moulding, the curvature of whose



section does not exceed the quadrant of a circle.

CAUL. A membrane in the abdomen which serves to cover the intestines.

CAULIFLOWER The finest sort of cabbage, with a seeded head.

CAUSEWAY, or CAUSEY A path raised above the level of the ground, and paved with stones or gravel.

CAUSTIC CURVE. A curve formed by the concourse or coincidence of the rays of light, reflected or refracted from any other curve

CAUSTICS. Medicines which, when applied to any part of the body, burn it to a hard crust

CAUTERY Any burning application

CAYENNE PEPPER. A powder prepared from the pods of several species of the capsicum, which originally came from Cayenne, but is now brought from both the Indies.

CAYMAN. The American alligator.

C.B. In England, Companion of the Bath.

C. C. Caius College: C. C. C. Corpus Christi College.

CEDAR. A well known evergreen, very like the juniper in appearance, which delights in cold mountainous places. The eaves are much narrower than those of the pine tree. and the seeds are produced in large cones. The most celebrated species is that of Lebanon, which is also found in Russia and which is introduced by transplanting into various parts of Europe and America.

CEILING. The inside of the roof or top of an apartment, in distinction from the surface of a floor.

CELERY. A sort of parsley much used in winter salads.

CELESTIAL GLOBE. An artificial representation of the heavens.

CELL. The apartment or chamber of a monk or nun; also a small close apartment in a prison

CELLAR. A place, commonly under ground, which serves as a store-room.

CELLS (in Anatomy). Bags or bladders where fluids are lodged; in Botany, the partitions in the husks or pods of plants where the seeds are lodged.

CELLULAR MEMBRANE. One of the largest membranes in the human body, of a vascular texture, fitted for holding the fat.

CEMENT. A compound of pitch, brick-dust, plaster of Paris, &c. used by chasers and other artificers for making their work firm

CEMETERY. A repository for the dead.

CENSOR. A magistrate among the Romans, who valued and taxed men's estates, and also punished any acts of immorality

CENSUS. In ancient Rome, an authentic declaration made by the citizens every five years before the censors, of the names of themselves and family, their place of abode, their condition in life, and the amount and nature of their estate. In modern use, an enumeration of the inhabitants of country. That of the U. S. is made every ten years.

CENT. A coin of the United States, whose value is the hundredth part of a dollar. In trade, per cent. denotes a certain rate by the hundred.

CENTAUR. In mythology, a fabulous monster, half man and half horse. In astronomy a constellation of the southern hemisphere, Archer in the zodiac.

CENTRE-BIT. A carpenter's tool, which makes a cylindrical excavation by turning on an axis or centre

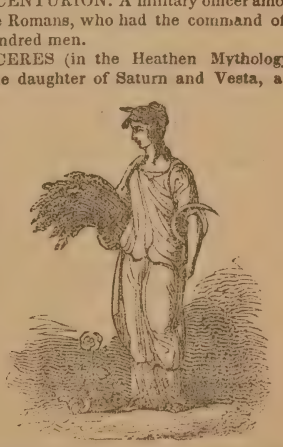
CENTRE OF GRAVITY. That point about which all the parts of a body in any situation balance each other.

CENTRIFUGAL. An epithet for that force which causes a body revolving about a centre, or about another body, to recede from it.

CENTRIPETAL. An epithet for that force which causes all bodies to tend towards some point as a centre.

CENTURION. A military officer among the Romans, who had the command of a hundred men.

CERES (in the Heathen Mythology) The daughter of Saturn and Vesta, and



goddess of corn and fruits She first taught men the art of cultivating the ground

CEREOLITE. A mineral substance, which in appearance and softness resembles wax.

CERES. In astronomy, the name of one of the asteroid planets, discovered in 1801 by Piazzi; its mean distance from the sun being 263,740,000 miles, and its periodical revolution 4 years, 220 days.

CERINE. In chemistry, a substance which forms from 70 to 80 per cent. of bees'wax, it is soluble in boiling alcohol.

CERITE. A siliceous oxide of cerium; sp. gr. 4·7.

CERITHINÆ. A sub-family of Mollusca, the Club-shells, of which the Cerithium, a genus of pectinibranchiate Gasteropods, is the type.

CERIUM. (Latin), a greyish mineral found in cerite.

Cerography. Painting or writing in wax.

CETE. An order of animals in the Linnæen system, including such as have breathing apertures on the head, tail horizontal, and pectoral fins instead of feet; as the dolphin, porpoise, and grampus, &c. Cetaceous fish suckle their young like land animals.

CHAFF. The husks of corn when threshed and separated from the grain.

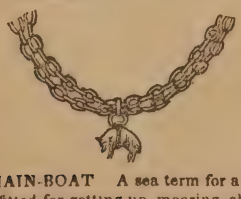
CHAFFINCH. A bird so called because it delights in eating chaff. It sings very prettily.

CHAFINGDISH. A utensil for warming meat

CHAGREEN. A rough kind of leather.

CHAIN (in Surveying). A measure of length, made of a certain number of links of iron wire, serving to measure a certain quantity of ground. Gunter's Chain consists of a hundred such links, each measuring 7.92 inches, and consequently equal to 66 feet or 4 poles 1 square chain=10,000 links=16 poles 10 square chains =100,000 links=160 poles=1 acre.

CHAIN. A series of rings or links fitted into one another. Chains are made of various metals, sizes, and forms, suited to different purposes. The gold chain is one of the badges of dignity worn by the Lord Mayor of London



CHAIN-BOAT. A sea term for a large boat fitted for getting up mooring chains, anchors, &c.

CHAIN-SHOT. Two bullets with a chain between them. They are used in sea warfare for cutting the shrouds and rigging of a ship.

CHALCEDONY. A sort of agate or onyx stone.

CHALDRON. A dry measure, consisting of 36 bushels.

CHALICE. The communion cup used at the sacrament of the eucharist.

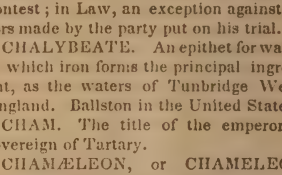
CHALK. A kind of white fossil, of which lime is made. It contains a little siliceous earth, and sometimes a small portion of iron Black chalk, or drawing slate, is a gray or bluish-black mineral, that is massive; the fracture glimmering and slaty.

CHALLENGE. In general, a summons to fight, whether in a duel, or in a pugilistic contest; in Law, an exception against jurors made by the party put on his trial.

CHALYBEATE. An epithet for waters in which iron forms the principal ingredient, as the waters of Tunbridge Wells, England. Ballston in the United States.

CHAM. The title of the emperor or sovereign of Tartary.

CHAMÆLEON, or CHAMELEON. A quadruped of the lizard tribe, that was



originally supposed to live on air, but is now known to live on flies, which it catches with its tongue. Its most remarkable characteristic is, that it assumes the colour of the thing to which it is applied, but its natural colour in the shade, and at rest, is said to be a bluish gray.

CHAMBER (in Gunnery). That part of a mortar or great gun, as far as the powder and shot reach when it is loaded.

CHAMBER (in England). A court, as the Star Chamber; in Commerce, a room set apart for mercantile business · also for keeping treasures and stores, as the Chamber of London, &c

CHAMBER OF A MINE. The place where the powder is confined, that is to be used for blowing up the works.

CHAMBERLAIN (in England). An officer who has the care of any particular chamber or place, as the Lord Great Chamberlain of England, a great officer of state, to whom belongs the government of the palace at Westminster; the Chamberlain of London, who receives the rents of the city, and deposits them in the chamber or treasury of London.

CHAMBERS (in England). Rooms or apartments belonging to the inns of court; in Anatomy, two spaces between the crystalline lens and the cornea of the eye, divided off by the iris.

CHAMELEON. See CHAMELEON.

CHAMOIS, or, The WILD GOAT, which inhabits the Alpine mountains, having horns erect, round, and smooth.

CHAMOMILE. An odoriferous plant, which has a very bitter taste, but many medicinal virtues.

CHAMPAGNE. A fine French wine, so called from Champagne, a former province of France.

CHAMPION (in Law). The combatant who undertook to fight in the trial by battel, formerly in use in England.

CHANCE-MEDLEY (in Law). The accidental killing of a man, not without the fault of the killer, but without any evil intent.

CHANCEL. That part of a church between the altar and communion table, and the rails or balustrade by which it is enclosed. This applies particularly to Catholic, and Episcopal Churches.

CHANCELLOR (in England). An officer of state, known by the title of the Lord High Chancellor of England, and the chief person next to the sovereign in the administration of justice; the Chancellor of the Exchequer is an officer who has the principal management of the king's revenue. The term is applied to the first judge of the Chancery Court in the state of New York

CHANCERY, THE COURT OF (in England). The highest court of judicature in the realm next to the Parliament. The Lord Chancellor presides in this court; and is assisted by the Vice-chancellor, the Master of the Rolls, the Masters in Chancery, &c.

CHANCES, DOCTRINE OF. A branch of modern mathematics, which treats of the probabilities of certain events taking place.

CHANNEL. The middle or deepest part of any sea; also a strait or narrow sea between two lands, as St. George's Channel, between Great Britain and Ireland, and the British or English Channel, properly called the Channel, between England and France.

CHANTRY. A chapel anciently joined to some cathedral or parish, where mass used to be said daily for the souls of the founders.

CHAOS. A dark and rude mass of matter, out of which the heathen philosophers supposed the world was formed

CHAPEL. In England, a smaller kind of church, which, being built for the convenience of the parish church, is denominated a chapel of ease.

CHAPERON A hood or cap, particularly that worn by the knights of the garter.

CHAPLAIN. In England, originally signified one who performed divine service in a chapel, but now more commonly one who attends upon the king, or other person of quality, for the performance of his clerical duties in the family The term is also applied to the clergyman attached to the navy or army.

CHAPLET. A wreath or garland worn about the head. Chaplets are borne in coats of arms, as trophies or ensigns of military prowess.

CHAPTER. A body of the clergy belonging to a cathedral, collegiate, or conventual church; also the place of their meeting, in England.

CHARACTER. Any mark which serves as a sign to denote some particular object, as the astronomical characters, mathematical characters, &c.

CHARADE. A sort of riddle, the subject of which is a word of one or two syllables.

CHARCOAL. The substance from wood half burnt, which is much used in the manufacture of gunpowder.

CHARDS OF ARTICHOKES. The leaves of artichoke plants bound in straw till they lose part of their bitterness, and become white

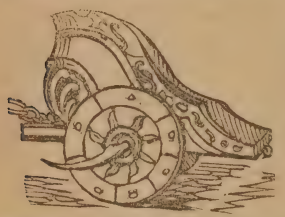
**CHAREWOMAN, or CHARWOMAN.** In England, a woman who goes out by the day to job

**CHARGE (in Law).** The instructions given by the judge to the jury; in Ecclesiastical Law, the instructions given by a bishop to the clergy of his diocese.

**CHARGE (in Gunnery).** The quantity of powder and ball, or shot, with which a gun is loaded; in Electricity, the accumulation of electric matter on one surface of an electric machine; in Heraldry, whatever is borne on coats of arms.

CHARGE D'AFFAIRES. A person intrusted with the public interest in a foreign nation. The Charges d'Affaires constitute the third or lowest class of foreign ministers.

**CHARIOT.** An ancient car, in which armed men used to ride to battle. They were furnished with scythes, hooks, and other offensive weapons.



**CHARMS.** Incantations or verses used by magicians and sorcerers.

**CHARR.** A small fish of the salmon kind.

**CHARTER.** In England, a writing or letter patent, whereby the king grants privileges to towns, corporations, &c. whence the name of Magna Charta, or the Great Charter of Liberties granted to the people of the whole realm. In the United States, Charters are granted by the State legislatures, or by Congress.

**CHARTS.** Draughts or descriptions of coasts; or, in general, projections of some parts of the sea in plans for the use of sailors.

**CHARYBDIS** A vortex or gulf at the entrance of the Sicilian straits, which is much celebrated by the ancient writers; but its exact situation is not known in the present day.

**CHASSEURS.** A select body of light infantry in the French army

**CHASTE-TREE.** A tree growing to the height of eight or ten feet, having the leaves fingered like those of hemp.

**CHATEAU.** Formerly a castle or baronial seat in France, now simply a country seat.

**CHATTELS (in Law)** Personal goods.

**CHECKY (in Heraldry).** A term for the shield, or any part of it, when it is divided into cheques or squares

**CHEEKS.** A general name among mechanics for pieces of timber in any machine, which are two of a kind.

**CHEESE.** The curd of milk separated from the whey, then pressed and hardened, and afterwards left to dry.

**CHEESECAKES.** A sort of cakes made of curds, sugar, butter, &c.

**CHEESE-PRESS.** A press in which the curds are pressed for making cheese.

**CHEESE-VAT.** The case in which curds are pressed into the form of a cheese

**CHEF-D'ŒUVRE.** A masterpiece or superior performance of any artist.

**CHEMISTRY.** In natural philosophy, the study of the effects of heat and mixture, with a view of discovering their general and subordinate laws; that branch of natural science, as defied by Dr. Brande, which investigates the nature and properties of the elements of matter, and their mutual actions and combinations. Chemistry determines the proportions in which they unite, and ascertains the modes of separating them when united. It also inquires into the laws and powers which preside over and affect the agencies by which material combination or decomposition takes place. Organic chemistry is the chemistry of vegetable and animal compounds; and Inorganic chemistry is that which investigates inorganic compounds. In the Atomic Theory of chemistry there are certain Chemical Symbols and Equivalents which have been adopted for the purpose of expressing by letters and figures the definite proportions in which substances chemically combine; and these are presented in a tabular form under the article Atomic Theory, to which the reader is referred.

CHEMISTRY, History of. Chemistry as a practical art connected with metallurgy, or the extraction of metals from their ores, was of high antiquity, for we learn from Scripture that Tubal Cain, the eighth from Adam, was an expert artificer in brass and iron. Various branches of the chemical art, such as the preservation of vinous liquors, dyeing, tanning, making glass, and various preparations in pharmacy and cooking were in use at a very early period: besides the famous Egyptian philosopher, called by the Greeks Hermes, and the Romans Mercury, is reputed to have been versed in many chemical arts, and to have been the founder of the chemical science, at least in that nation. From the Egyptians, Democritus, a Greek, learned the art of softening ivory, of vitrifying plants, and imitating precious stones, which he communicated to his countrymen. After his time we read of many metallic preparations, as ceruse,

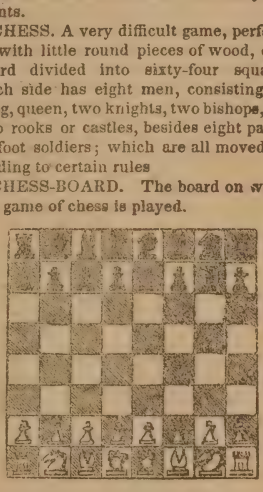
verdigris, litharge, &c. Dioscorides describes the distillation of mercury from cinnabar; but their process of distillation consisted in the separation of the air, or the more subtle parts of water, from the rest of the matter, which was done by putting the matter to be distilled into a vessel, the mouth of which was covered with a wet cloth, and by this means the steams of the ascending vapor were condensed, which were afterwards procured by wringing out the cloth. Such is the distillation spoken of by Galen, Oribasius, and Paulus Ægineta. After the conquests of the Saracens in the seventh and eighth centuries, chemical researches began to be more enlarged. Geber, Avicenna, and other Arabian physicians introduced into the materia medica many preparations both vegetable and mineral; but the knowledge of those chemical agents, the acids and the alkalis, was at that time exceedingly imperfect, for, except the acetous acid and soda, there is no mention of these matters until many years after. Roger Bacon does not appear to have been acquainted with them in the twelfth century, and Raymond Lully only hints at the existence of the marine acid.

There was one circumstance at this period which contributed more than any other to the improvement of chemistry, that was the then growing attachment to the study of alchemy, and the search after the philosopher's stone, which, though false in principle, yet led in its results to a more extensive acquaintance with the composition of mineral bodies. After the introduction of this art, which, as its name denotes, was of Arabian origin, we read of alcohol and the newly discovered menstrua, which were powerfully applied to the transmutation of metals into gold. Although the futility of such pursuits served to bring the science of chemistry for some time into dispute, yet the knowledge which was acquired of metals and minerals by such repeated operations upon them, was turned to the useful purposes of medicine. To the alchemists we are indebted for the methods of preparing spirits of wine, aquafortis, volatile alkali, vitriolic acid, gunpowder, &c. In the improvement of medicine by means of chemistry, Basil Valentine stood foremost. In his Currus Triumphalis Antimonii, he communicated to the public a number of valuable antimonial medicines. Paracelsus, another chemical professor, was so sanguine in the application of his favorite science, that he opposed himself to the practice of Galen, and endeavored to cure all disorders by chemical preparations. He was followed by Van Helmont, Glauber, and Lemery, who all applied their knowledge of chemistry to the service of medicine. The science of metallurgy at the same time made corresponding advances. Agricola, who was a contemporary with Paracelsus, laid the foundation for a correct knowledge of metals. Lazarus Ecker, Schulten, and many other Germans, described the processes of assaying metals. Anthony Neri Dr. Merret, and Kunkel, the discoverer of the phosphate of urine, have explained the processes of making glass, enamels, &c. but their writings were not entirely free from the alchemical illusions of the day. Kircher and Conryngius, who followed them, succeeded in purifying the science of chemistry from these errors. Since that time chemistry has assumed a new and systematic form, to which the writings and discoveries of many distinguished men in the course of the last two centuries have materially contributed, as Bacon, Boyle, Newton, Boerhaave, Geoffroy, Reaumur, Lavoisier, Stahl, and Bergman. To this list might be added the works of Brande, Ure, Faraday, Laurent, Hoffman, and others in our own time, who have digested the improvements and corrected or enlarged them by farther experiments.

**CHERVIL.** An umbelliferous plant whose leaves are divided into many segments.

**CHESS.** A very difficult game, performed with little round pieces of wood, on a board divided into sixty-four squares. Each side has eight men, consisting of a king, queen, two knights, two bishops, and two rooks or castles, besides eight pawns or foot soldiers; which are all moved according to certain rules

**CHESS-BOARD.** The board on which the game of chess is played.



**CHESS-ROOK.** Another name for the castles which stand at the outer corners of the chess board.

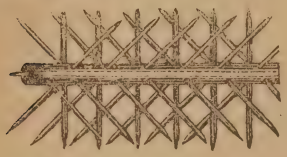
**CHEST** (in Anatomy). The breast, thorax, or that part of the human body which contains the heart and lungs.

**CHESTNUT.** A tree bearing a very roughcoated fruit of the same name. The wood was formerly much valued as timber in England, and is now used in the finer kinds of joinery work In the United

States it is seldom employed except as timber or fuel.

CHEVALIER Literally a knight or horseman, answering to the English cavalier.

CHEVAUX DE FRISE (in Fortification). A sort of turnpikes or tournequots, consisting of spars of wood set into a piece of timber, and armed with a short spike, so as to point all ways They serve to stop up breaches



CHEVRON (in Heraldry). One of the honourable ordinaries, representing two rafters of a house joined together in chief, such as carpenters set on the highest part of a house to support the roof

CHIARO OBSCURO. See CLARO OBSCURO.

CHICKWEED. An annual.

CHIEF (in Heraldry). One of the honourable ordinaries, which occupies the head or upper part of the escutcheon. As the head is the chief part of a man, so is the chief the principal part of the escutcheon, and contains a third part of the field

CHIEF The head man of a tribe of Indians.

CHILTERN HUNDREDS. A hilly district of Buckinghamshire, England, which has belonged to the crown from time immemorial, having the office of Steward of the Chiltern Hundreds attached to it. By the acceptance of this office, any member of parliament is enabled to vacate his seat; for as no member can retain his seat after accepting an office, so likewise every member wishing to vacate his seat is obliged to do it in this manner; that is, in the usual phrase, 'accept the Chiltern Hundreds.'

CHIMÆRA (in the Heathen Mythology). A monster feigned to be like a lion in the forepart, a dragon behind, and a goat in the middle.

CHIMES OF A CLOCK. A particular apparatus, by which the clock at certain times is enabled to play certain tunes.

CHIMNEY. That part of a house which, by the means of a funnel, serves to carry off the smoke. Various devices have been tried to prevent the smoking of chimneys, as the carrying them up zigzag, or narrower at the top than at the bottom, and the like, which have all been found ineffectual. It is now supposed that chimneys should be built as nearly perpendicular as possible, should be free from all roughness in the inside, and be a little wider at the top than at the base.

CHINTZ. A fine Indian painted calico Also cotton goods made elsewhere in imitation of it.

CHIP SQUIRREL. A beautiful little striped animal common in the woods of North America.

CHINCHILLA. A beautiful little animal of Peru, probably of the rat kind, which produces a fur much in use.

CHIROMANCY. The pretended art of foretelling a person's fortune by the lines in his hands

CHIVALRY. The name anciently given to knighthood, a military dignity; also the martial exploits and qualifications of a knight. Chivalry, as a military dignity, is supposed by some to have taken its rise from the crusades, because these expeditions gave rise to many chivalrous exploit

and feats of arms; but it is evident that its origin may be traced much higher, to the northern nations who settled in Europe on the decline of the Roman empire, whose martial habits and temper led them to make valour and prowess, the only sources of honour and distinction.

CHIVES. A sort of small onions.

CHLORINE. A gaseous body of a green yellow colour.

CHLORITES. A kind of green jasper, almost as pellucid as the coarse emerald.

CHOCOLATE (in Commerce) A kind of paste, prepared chiefly from the cocoa nut, with a mixture of other ingredients

CHOCOLATE TREE. A species of the cocoa tree, from the fruit of which the chocolate is prepared

CHOIR. That part of a cathedral where the service is performed.

CHOKEDAMP (in Mining). The noxious air occasionally found at the bottom of mines.

CHOKEPEAR. A very rough tasted pear.

CHOLERA MORBUS. A disease consisting of a violent perturbation in the belly, accompanied with a discharge of bile upwards and downwards.

CHORD (in Geometry). A right line, drawn from one part of an arc of a circle to another

CHORDS (in Music) Strings, by the vibration of which the sensation of sound is excited.

CHOROGRAPHY. A part of geography, which treats of the description of particular countries.

CHORUS. A company of persons all singing in concert.

CHRISM. An unction or anointing of children, which was formerly practised as soon as they were born

CHRIST. Which properly signifies anointed, is the name of the ever blessed Redeemer of the world.

CHISTENDOM. The whole Christian world.

CHRISTENING. The ceremony of admitting a person into the communion of the Christian church, by means of baptism, or sprinkling with water. It is a term particularly applied to infant baptism.

CHRISTIAN. One who professes the religion of Christ.

CHRISTMAS. A festival observed in the Christian church, on the twenty-fifth of December, in commemoration of our Saviour's nativity.

CHROMA. A soft kind of music.

CHROMATICS. That part of optics, which explains the several properties of light and colour.

CHRONICAL. An epithet for diseases of long duration.

CHRONOLOGY. The science which teaches the measures and divisions of time The divisions of time are either natural or artificial; the natural divisions of time are the year, month, week, day, and hour, deduced from the motions of the heavenly bodies, and suited to the purposes of civil life; the artificial divisions of time are the cycle or period, the epoch and the æra or epocha, which have been framed for the purposes of history.

CHRONOLOGY, History of. Chronology, as regards the natural divisions of time, was doubtless coeval with the creation, for we learn from the sacred historian that the work of creation was performed within the period of a week, or seven days, whence this division was observed by the Hebrews, and from them transmitted to the Egyptians and other nations. But the Persians are said to have been ignorant of such a division. The Greeks had weeks of ten days, and the Romans weeks of eight days. It is evident from the names of the days of the week among most European nations, that we derive this division from the ancient Celts or Scythians, who, in all probability, at the dispersion of mankind after the deluge, borrowed this patriarchal mode of measuring time. The year is that division of time which was regulated by the motions of the sun, being that period of time in which the sun passes through the signs of the zodiac. This division was doubtless formed at the time that astronomical observations were first made; but the Egyptians are the first people on record who formed this division, which they made to consist of 360 days, and subdivided into 12 months of 30 days each; to these Trismegistus is said to have added five more days. The ancient Jewish year was the same as the Egyptian; but on their departure from Egypt they adopted the lunar year, consisting of 30 days and 29 days alternately, and in order to make it agree with the solar year, they sometimes added 11 or 12 days at the end of the year, and sometimes a whole month after a certain number of years. The Greeks also reckoned by the same kind of year. The ancient Roman year was also lunar, and at first consisted of 10 months of 30 and 31 days; two months were afterwards added by Numa Pompilius, which consisted of 29 and 31 days, making in the whole 355 days. Julius Cæsar first re

formed the calendar, and adopted the solar ear of 365 days in the common year, with the addition of a day in every fourth year, called Bissextile, or Leap Year; in order to adjust the computation to the true solar year, it was then reckoned 365 days 6 hours, but as the true solar year was found to be 365 days, 5 hours, 48 minutes, 48 seconds, a farther reformation of this calendar has been made on the assumption that the solar year consists of 365 days, 5 hours, and 49 minutes. According to this computation, which was made by Pope Gregory XIII. in 1582, and thence called the Gregorian style, an intercalation of one day in February should be made every fourth year, and that the sixteen hundredth year of the Christian æra, and every fourth century hereafter, should be a bissextile or leap year. One day consequently is to be intercalated in the years 2000, 2400, 2800, &c.; but in the intervening centuries 1700, 1800, 1900, 2100, &c. it is to be suppressed, and they are to be reckoned common. Moreover as the equinoxes had fallen back ten days and the full moons four days, since the Nicene council, A. D. 325, he ordained that ten days should be cut off after the fourth of October, so that the fifth should be the fifteenth This mode of reckoning, which is now introduced in most countries of Europe, is called the New Style, to distinguish it from tho Old Style, or the former reckoning. This is however still not perfectly correct, for as the excess of the Julian year, within the space four centuries, is three days, one hour, and twenty minutes, that of the Gregorian is one hour and twenty minutes within the same period, or about a day in 7200 years.

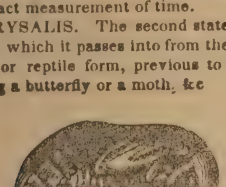
Besides these alterations in the form and length of the year, attempts had been made by the Greeks at an early period to adjust in their reckonings the lunar year to the solar year, for which purpose they hit on the device of framing cycles or series of years, which being numbered in an orderly manner from first to last, should return to the same point of reckoning from which they commenced. The first of these cycles was framed by Cleostratus, about 532 years before Christ. It consisted of eight years, or 2922 days, during the course of which 86 lunations would elapse of 29 and 30 days alternately, together with three intercalary months. By this cycle he proposed to adjust the lunar to the solar year, so that at the conclusion of each cycle the moon should be renewed, but he failed in his object, for at the end of 16 years there was found to be an error of three days, which in the space of 160 years would amount to more than a whole month The Metonic Cycle, formed by Meton at the commencement of the Peloponnesian war, for the purpose of correcting the former, consisted of 19 years, at the end of which the sun and moon would be in the same quarter. This cycle, which was so much esteemed by the Greeks as to be called the Golden Number, nevertheless failed to the amount of eight or ten hours at the end of one period, and of three days in 133 years The cycle of Eudoxus was an improvement on that of Cleostratus, by subtracting a month of 30 days from a period of 160 years, which was supposed to be equal to the difference that would subsist at the expiration of that period between the solar and the lunar motions. The Calippic Period, contrived by Calippus at the new moon of the summer B. C. 331, was intended as an improvement upon that of Melin, which it multiplied by four, so as to make a period of 76 years, or 27,759 days. As 940 lunations are equal to 97,758 days, 9 hours, 5 minutes, and 9 seconds, which is only 40′ 29″ 57‴ less than 76 solar tropical years, it follows that the lunar motion, according to this calculation, did not vary more than 14 hours, 13 minutes, and 22 seconds, wherefore this period has been chosen to form the basis to the modern cycle of the moon, which is said to have commenced one year before the Christian æra. There is also a solar cycle, consisting of a series of 28 years, at the completion of which the same order of bissextile and dominical letters return, a cycle which came into use in the early ages of Christianity; besides the cycle of indiction, or a series of 15 years, introduced in the reign of Constantine; the Epacts, or excesses of any solar revolutions above the lunar, which were introduced for the purpose of ascertaining the time when Easter ought to be celebrated; the Dionysian Period, or series of 532 years, formed by Dionysius Exiguus, a Roman abbot, by multiplying the solar cycle 28 into the lunar 19, for the purpose of restoring the new and full moons to the same day; and lastly, the Julian Period, invented by Scaliger, and so called because it is adapted to the Julian year; this is a series of years formed by the multiplication of the solar and lunar cycles and the cycle [illegible] indiction into one another, making the [illegible] give 7980 Julian years.

The application of chrono[illegible] of [illegible]tory is of comparatively moderne [illegible] In Homer and other ancient wri[illegible] there appears to have been no idea of [illegible]rding events in any exact order of time. The

succession of Juno's priestesses at Argos served Hellanicus for the regulation of his history, but the principal Greek historians followed no other order than what was furnished by the series of events which they narrated. The Roman historian Livy defines the periods of the events described in his history by the appointment of consuls, and afterwards the succession of emperors and kings served a similar purpose in forming the histories of other European nations until a more exact computation of time began to be observed.

CHRONOMETER. An instrument for the exact measurement of time.

CHRYSALIS. The second state of an insect, which it passes into from the caterpillar or reptile form, previous to its becoming a butterfly or a moth, &c



CHUB. A river fish of the carp kind, so called on account of its great head.

CHRONOGRAM. An inscription in which numeral letters occurring in the words are made to express the date or epoch of the action mentioned, as in the motto of a medal struck by Gustavus Adolphus in 1632.

ChrIstVs DVX; etgo trIVMph vs.

CHRYSANTHEMUM. A genus of composite plants, of which the Ox-eye Daisy and Corn Marigold are familiar examples.

CHRYSOBALAN. A genus of tropical trees.

CHRYSOBERYL. A precious stone, of a yellowish-green color.

CHRYSOCHLORE. A genus of small insectivorous mammals, representing in Africa the mole of Europe. Its fur reflects most brilliant metallic hues of green and gold, a circumstance which though common to the outer covering of birds, fishes, and insects, has not yet been observed in any other quadruped than this.

CHRYSOGRAPHY, The art of writing in letters of gold.

CHRYSOLITE. A precious stone, a variety of apatite, of a yellowish or greenish color.

CHRYSOLOGY. That branch of political economy which relates to the production of wealth.

CHRYSOMELA. A genus of beautiful beetles.

CHRYSOPRASE. A precious stone, a pale green variety of quartz

CHRYSOTYPE. A photographic process, in which a solution of gold is used.

CHURCH. A place or building consecrated to the public worship of God. In a restricted sense, a building consecrated to Christian worship and ordinances; the collective body of Christians, sometimes called the Catholic or universal church; a particular body of Christians, united under one form of ecclesiastical government, in one creed, and using the same ritual and ceremonies, the followers of Christ in a particular city or province; the body of clergy, or ecclesiastics, in distinction from the laity; divine service; ecclesiastical authority. Invisible Church, the collective body of saints in heaven and on earth.

CHYLE. In animal physiology, a milky fluid generated in the stomach during the process of digestion, by the action of the pancreatic juice and the bile on the chyme, and which being absorbed by the lacteal vessels is gradually assimilated into blood.

CHYME. That particular modification which food first assumes after it has undergone the action of the stomach, and which, after the chyle has been separated from it, becomes excrementitious matter.

CIBORIUM. An insulated arched vault on four columns; any insulated tabernacle; the tomb of a martyr, sculptured and used as an altar; the coffer containing the host in Roman Catholic ceremonies; a large drinking cup; the Egyptian bean.

CICADA. A genus of hemipterous insects of many species, living on trees or shrubs, popularly called tree-hoppers, frog-hoppers, &c., and in some places, erroneously, locusts.

CICATRICE. A scar; a little seam or elevation of flesh remaining after a wound or ulcer is healed; a cicatrix; a mark; an impression.

CICATRICLE. The germinating or fœtal point in the embryo of a seed or the yolk of an egg.

CICELY. A plant, a species of Chærophyllum. The Sweet Cicely is the Myrrhis odorata.

CICERONE. A guide; one who shows and explains to strangers the curiosities of a place.

CICINDELA. A genus of coleopterous carnivorous insects, popularly called the Sparklers, in allusion to their rich metallic colors.

CHEF-D'ŒUVRE. A masterpiece or superior performance of any artist.

CHERRY. The well known fruit of a tree which was introduced into Britain at the time of its invasion by the Romans.

CHERUBIM. An order of angels composed of various animals, as a man, an ox, an eagle, and a lion.

CICONIA. A genus of wading birds (the storks), the largest of the heron family.

CILIA. In anatomy, the hairs which grow from the margin of the eyelids.—In botany, long hairs on plants or leaves.

CILIARY. Belonging to the eyelashes.

CILIOBRACHIATE. In physiology, having the arms provided with cilia, more especially applied to a class of Polypods.

CILIOGRADES. A tribe of the Acalephans, or Sea-nettles, which swim by means of cilia.

CIMBIA. In architecture, a fillet or band round the shaft of a column.

CIMICIDES. An extensive tribe of hemipterous insects, of which *Cimex lectuarius*, or common bedbug, is the type.

CIMMERIAN. Pertaining to the Cimmerii, or their country; extremely and perpetually dark. The Cimmerii were an ancient people of the land now called the Crimea, and their country being subject to heavy fogs, was fabled to be involved in deep and continual obscurity. Ancient poets also mention a people of this name who dwelt in a valley near Lake Avernus, in Italy, which the sun was said never to visit.

CIMOLITE. In mineralogy, a light grey silicate of alumina, from the island of Cimolo.

CINCHONA. A celebrated tree in Peru, which produces Peruvian bark, and also its extract, quinine, both extensively used in medicine.

CINCHONACEÆ. A native order of plants, the Rubiaceæ of Jussieu and other botanists, of which cinchona is the type.

CINCHONINE. A vegetable alkali found in cinchona.

CINCHONATE. A salt formed of cinchonic acid and a base.

CINERITIOUS. Resembling ashes; grey.

CINGULUM. In zoology, a term applied to the neck of a tooth, or that constriction which separates the crown from the fang.

CINNABAR. In mineralogy, a beautiful red pigment, the sulphuret of mercury. Vermilion is pure cinnabar, being a compound of mercury and sulphur in nearly the same proportion, viz.: mercury, 84·50; sulphur, 14·75: sp. gr. 6·7—8·2.

CINNAMIC ACID. An acid formed in translucent prisms from oil of cinnamon.

CINNAMON STONE. A mineral of a red color found in Ceylon and Brazil. It is composed of silica, alumina, lime, and oxide of iron.

CINNYRIDÆ. In ornithology, a family of birds, the Sun-birds, which are distinguished by their brilliant plumage: Cinnyris is the type and genus.

CINQUEFOIL. In botany, a five-leaved clover; the common name of plants of the genus Potentilla.—In architecture, a five-leaved ornament, in circular and other divisions of the windows of ancient churches.

CINQUE-PORTS. Originally, five English ports on the eastern coast, viz., Dover, Sandwich, Hastings, Romney, and Hythe, but to these Winchelsea, Rye, and Seaford, were afterwards added.

CINQUE-SPOTTED. Having five spots.

CINTER. In architecture, the framing erected between piers to support the materials of an arch during erection, till it is keyed.

CIPHER. The arithmetical character 0, or zero, which signifies nothing by itself, but when placed at the right hand of any common number, increases it tenfold, or on the left of a decimal, decreases it in like proportion; any arithmetical figure; a number; a character in general; an intertexture of letters, as the initials of a name; a device; an enigmatical character, a secret or disguised manner of writing; certain characters agreed on by two or more persons to stand for letters or words, and understood only by them. In figurative language, a thing of no consequence or importance; a nonentity.

CIPHER-KEY. A key for deciphering writings.

CIPHERING. The act or art of computing by numbers; arithmetic.

CIPOLIN. In mineralogy, a green Italian marble, with white zones. That from Rome contains carbonate of lime, quartz, schist, and a little iron.

CIPPUS. In antiquity, a small monumental column, bearing an inscription or epitaph; a sign-post.

CIRCAR. In Hindostan, a district or province.

CIRCASSIAN. Pertaining to Circassia; a native of Circassia: a kind of woollen cloth.

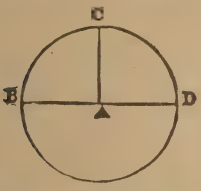
CIRCEAN. Pertaining to Circe, a fabled goddess of antiquity, celebrated for her knowledge of magic and venomous herbs, by which she was able to fascinate and work her incantations; hence, magical, venomous.

CIRCINAL, OR CIRCINATE. In botany, applied to a leaf when spirally rolled up from the apex towards the base, as in ferns.

CIRCINUS. The Compasses,—a constellation of four stars near the South Pole.

CIRCIUM. In botany, a name of the genus Carduus.

**CIRCLE.** A plain figure bounded by one line only, called the circumference, as B C D, to which all the lines drawn to it from a point in the middle, called the centre, as A B, A C, and A D are equal to each other. The line which divides it into two equal parts is called the diameter, as B D. Every circle is supposed to be divided into 360 parts or degrees, wherefore angles are measured by the arc of a circle, thus B A C, which is a right angle, is equal to the arc B C, or 90 degrees.

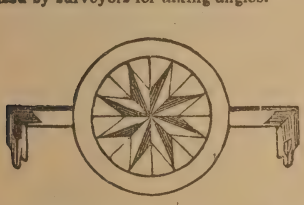



**CIRCUITS.** In England, certain divisions of the kingdom, through which the judges pass once a year, or oftener, to hold courts and administer justice. A similar division exists in the United States in respect to the national court.

CIRCULATION (in Anatomy). The natural motion of the blood in a living animal, whereby it proceeds from the heart to all parts of the body by the arteries, and returns to the heart by the veins.

CIRCUMFERENCE. The curve line which bounds a circle.

CIRCUMFERENTOR. An instrument used by surveyors for taking angles.



**CIRCUMFLEX.** An accent in Grammar, marked in Greek thus ( ~ ), in Latin thus (^), to regulate the pronunciation.

CIRCUMLOCUTION. The describing a thing by many words, which might be explained by a few.

CIRCUMSTANTIAL. An epithet in law, for evidence drawn indirectly from circumstances, as distinguished from positive proofs.

CIRCUMVALLATION, or A LINE OF CIRCUMVALLATION. A trench thrown up quite round a besieger's camp.

CIRCUS A circular building at Rome where games were exhibited; it is now used to designate a place where feats of horsemanship are exhibited In Architecture, an assemblage of houses built so as to form a circle.

CITRIC ACID. The acid of limes.

CITRON. A species of the lemon, which is much cultivated in Persia and the warm climates of Europe.

CITY In England, a corporate town having a bishop's see, and a cathedral town. This distinction is not always observed in common discourse, for they say the town of Ely, which is a bishop's see, and the city of Westminster, which at present has no see. In the United States the term is applied to any incorporated town, which has a mayor and aldermen. By geographical writers it is loosely applied to any large town.

CIVET CAT. An animal of the weasel kind, about two feet in length exclusive of the tail. It is a native of warm climates but many of them are kept in Europe, particularly in Holland, for the civet This is taken from a bag under its tail, and is a fat substance, having the smell of musk, and used as a perfume.

**CIVILIAN** A doctor or professor of the civil law.

CIVIL LAW, otherwise called IMPERIAL LAW The law of the Roman empire, digested from the laws of the republic and

those of the emperors, and adopted by most of the nations of Europe. This law is used under certain restrictions in the ecclesiastical courts, England, as also in the university courts and court of the admiralty

CIVIC CROWN. A garland composed of oak leaves, which was given to a Roman soldier who had saved the life of a citizen.

CIVIL YEAR. That form of the year which each nation has adopted for computing their time by. The civil year in Europe, and America, consists of 365 days for the common year, and 366 days for leap year, which happens every fourth year.

CLARIFICATION. The making any liquid, by a chymical process, clear from impurities.

CLARINET A wind instrument of the reed kind.

CLARO, or CHIARO OSCURO (in Painting). The art of distributing to advantage the lights and shadows of a piece.

CLASS. A term applied to the general divisions of any subject, as in the Linnæan system, animals, plants, and minerals are divided into classes.

CLASSICAL. A term applied to authors of standard authority, particularly the writers among the Greeks and the Romans, whose works are comprehended under the name of the Classics.

CLAVICLES. The two channel bones which fasten the shoulder bones and the breast bone.

CLAY. A sort of fat clammy earth, stiff, viscid, and ductile to a great degree. The clays are opaque and noncrystallized bodies, and of dull fracture. They form with water a plastic paste, possessing considerable tenacity, which may be hardened with heat, so as to strike fire with steel. The principal clays are porcelain clay, consisting of silica and alumina; marl clay, containing some carbonate of lime, pipe clay, requiring a high temperature for fusion; and potter's clay, which is used for coarse pottery.

CLEMATIS. A climbing shrub, otherwise called the Virgin's Bower, or Wild Climbers The common sort, bearing a bluish flower, is a native of the south of Europe

CLERGY. A general name for all persons in holy orders.

CLERK (in Law). A clergyman; in Commerce, one who keeps a merchant's accounts.

CLIENT. One who retains a lawyer to manage or plead his cause.

CLIFF or CLEF (in Music). A mark set at the beginning of a song, to show the key in which the piece is to be performed

CLIMATES. Spaces upon the surface of the terrestrial globe, contained between two parallels of latitudes, so far distant from each other that the longest day on one parallel, differs half an hour, from the longest day on the other. It is also used to denote the general character of the weather and temperature, in any given place.

CLOAK. An upper loose garment, worn over the clothes in cold or rainy weather.

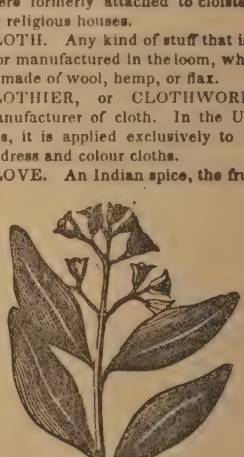
CLOCK. A machine for measuring time, which tells the hour by a stroke upon a bell. In order that the clock may be an equable measure of the solar day, which is unequal, it is usual for clocks and watches to go a few minutes faster or slower than the sun.

CLOISTERS. Covered passages, such as were formerly attached to cloisters or other religious houses.

CLOTH. Any kind of stuff that is woven or manufactured in the loom, whether it be made of wool, hemp, or flax.

CLOTHIER, or CLOTHWORKER A manufacturer of cloth. In the United States, it is applied exclusively to those who dress and colour cloths.

CLOVE. An Indian spice, the fruit o



the clove tree, which grows in the spice islands in the Pacific Ocean

**CLOUD** A mass of vapour, more or less opaque, drawn or sent out of the earth into the atmosphere. When condensed into water, they fall in rain.

**CLOVE GILLIFLOWER, or CLOVE PINK.** A finer kind of pink cultivated in gardens

**CLOVER.** A kind of three leaved grass or trefoil; it is much used as a food for cattle.

**CLYSTER.** An instrument for the injection of any fluid into the body.

CO. An abbreviation of company.

**COAL.** In mineralogy, an inflammable fossil substance, or vegetable origin, found embedded in strata of different thickness. It appears to have been produced, in primeval ages, by the long-continued decomposition of wood, by which 9 atoms of carbonic acid, 3 of carburetted hydrogen, and 3 of water have been separated. The coal of the tertiary strata of the earth's crust is generally lignite-wood or brown coal. In geology, the coal formation, coal-fields, or coal measures are a series of deposits consisting of coal, limestone, ironstone, sandstone, and shales of various kinds and thicknesses.

In America, it was first discovered by Father Hennepin, in 1669, on the Illinois River where Ottawa now stands. It was first used from Virginia, near Richmond, which for many years supplied the whole Atlantic market. The first Antharcite was sent to Philadelphia, in 1803, but was considered of so little value that it was used for making side-walks. In 1877, we produced over 21,000,000, tons of this now esteemed coal. In 1820, there was produced in the United States, of Bituminous and Antharcite about 81,600 tons, but in 1877, there was produced 50,000,000 tons. This tonnage places our Country as the second coal producer in the world, Great Britain being first, with an output of 130,000,000 tons in 1877. With regard to extent and accessability the United States stand foremost among nations, and is destined to become at no distant day the great fuel producer of the world. We give below the area of the coal fields in various countries.

| COUNTRIES. | AREA OF COAL FIELDS IN SQUARE MILES. |
|---|---|
| United States | 192,000 |
| Nova Scotia | 18,000 |
| Great Britain | 11,900 |
| Spain | 3,000 |
| France | 1,800 |
| Prussia | 1,800 |
| Austria | 1,800 |
| Belgium | 990 |
| Chili, Australia, India, China, &c. | 28,800 |

**COASTER.** A vessel employed in going from one port to another along the coast.

**COAT.** A garment worn commonly uppermost; a thin covering laid or done over any hing, as a coat of paint, &c; in Anatomy, the membraneous cover of any part of the body, as the coats of the eye, the stomach. &c.

**COAT ARMOUR, or COATS OF ARMS** Armorial ensigns or bearings, which were originally painted on the coats of arms.

**COATIMOUDI.** An animal shaped somewhat like a raccoon with a long snout flexible like the trunk of an Elephant When asleep it rolls itself into a lump.

**COAT OF MAIL.** A piece of armour made in the form of a shirt, and wrought over with many iron rings.

**COBALT.** A mineral of a gray colour, consisting of silver and arsenic, which latter is obtained from it in great quantities. It has never been found pure in nature, but mostly in the state of an oxide, or alloyed with other metals.

**COCAO.** See COCOA.

**COCCULUS INDICUS.** An Indian tree producing a poisonous berry, which is one of the deleterious ingredients unlawfully used in the making of beer

**COCHINEAL.** An insect which infests different plants, but particularly the opuntia. This insect, when dried, is used in dyeing a rich scarlet. There is a red berry which grows on an American tree, called the Coccus Americanus or Ficus Indianus, which also yields a beautiful scarlet dye.

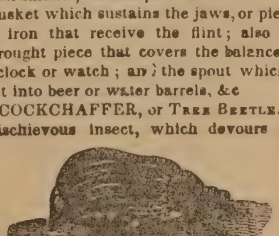
**COCHLEA** (in Anatomy). The internal cavity of the ear, so called from its resemblance to the spiral shape of the cochlea, or snail's shell.

**COCHLEA** (in Mechanics). One of the five mechanical powers, otherwise called screw.

**COCK.** The male of most birds, particularly of the well known domestic fowl in a farmyard.

**COCK.** The name of a part of several instruments, as that part of the lock of a musket which sustains the jaws, or pieces of iron that receive the flint; also the wrought piece that covers the balance in a clock or watch; and the spout which is put into beer or water barrels, &c

**COCKCHAFFER, or TREE BEETLE.** A mischievous insect, which devours the



leaves of trees, &c The grub, which is soft and gray, with testaceous head and

legs, remains in the earth three or more years before it is transformed into the perfect insect.

COCKATOO A species of parrot, having a short tail and a tuft of long feathers on the head. It is a native of the Moluccas.

COCKBOAT. A small boat belonging to a ship, that is used in rivers.

COCKET (in England). The office at the Customhouse where the goods to be exported are entered; also the Customhouse seal, or the parchment sealed and delivered by officers of the customs to merchants, as a warrant that their goods are customed.

COCK FIGHTING A cruel sport common in England, which consists in pitting two cocks against each other, of the game breed, and armed with spurs that inflict deadly wounds.

COCKING (in Carpentry) A method of securing beams to wallplates

COCKLE. A sort of shell fish.

COCKNEY. A nick name given to one who is born and bred in the city of London, within the sound of Bow bells.

COCKPIT. A place where cocks fight; also an apartment in the treasury in London, where the king's speech is read before the meeting of parliament

COCKPIT. The place in a ship of war where the wounded are dressed by the surgeon.

COCK'S COMB. A fine plant cultivated in gardens and hot houses. Some sorts are annuals and some perennials.

COCOA NUT TREE. A tree common in Asia and South America, which yields the fruit called the cocoa nut. The shell

of the fruit is of a bony substance, containing a kernel and a sweet refreshing liquor, called by the natives, toddy The husk of the shell is used for making chocolate, and from the kernel is extracted an oil.

COCKSWAIN, vulgarly called Coxson. An officer who has charge of the cockboat

COCTION. The reducing the aliments to chyle; in Surgery, the reducing morbific matter to a healthy state.

COD. A large fish which inhabits the northern seas, and is much esteemed for its flesh. The cod fisheries on the banks of Newfoundland employ three hundred vessels and several thousand men.

COD FISHER. A vessel employed in the cod fishery; also the person employed.

CODEX. A name particularly applied to the volume, containing the ancient Roman or Imperial law.

CODICIL. A supplement to a will.

CODLIN. An apple, so called, because it is fittest to be coddled or boiled in milk.

COFFEE. The fruit of the coffee tree, and the drink which is made from it.

COFFEE ROASTER. An iron utensil, in which the coffee is roasted gradually over a fire, until it is in a fit state for grinding.

COFFEE TREE. A tree of the jasamine kind, which bears a berry known by the same name. The berries grow in clusters like cherries. The tree which is a native of Arabia bears the best coffee, and passes under the name of Mecha Coffee is produced in the West Indies, South America and the Asiatic Islands.

COFFER. A chest or trunk; in Mineralogy, a trough in which tin ore is broken to pieces; in Fortification, a trench cut in the bottom of a dry ditch

COFFERDAM. A case of piling fixed in the bed of a river, for the purpose of building a pier dry.

COFFIN. A case or box for the reception of a dead body, that is to be buried; in the veterinary art, the whole hoof of a horse's foot above the coronet.

COG. The tooth of a wheel.

COGNIZANCE (in Law). The hearing of a thing judicially; also the acknowledgment of a fine.

COGNIZANCE OF PLEAS. In England a privilege granted by the king to a city or town to hold pleas of all contracts, &c. within the liberty of the franchise; in Heraldry, the same as the crest.

COHESION, or ATTRACTION OF COHESION. That power by which the particles of bodies are held together: the absolute cohesion of bodies, is measured by the force necessary to pull them asunder.

COHORT. A military body among the Romans, consisting of the tenth of a legion, or about 600 men.

COIF. A sort of hood or cap for the head, formerly worn in England, by serjeants at law.

COIL. The ring or circle formed by a cable in coiling or winding it.

COGNOMEN. The last of the three names (the other two being the prænomen and the nomen) by which it was common for the Romans of good family to be designated; a surname; the family name.

COGNOVIT. In law, an acknowledgment by a defendant that the plaintiff's claim is just, and consent that judgment be entered accordingly.

COIR. A material for cordage, consisting of the fibres of the cocoa-nut; cordage made of this material.

COIX. A genus of tropical East Indian grasses, popularly called Job's tears.

COIN. A corner or external angle; a wedge; a quoin; money stamped; a piece of metal converted into money, by impressing on it marks, figures, or characters; that which serves for payment. In archæology, a kind of die cut diagonally, after the manner of a flight of a staircase. Current coin is money legally stamped, and circulating in trade. Ancient coins are chiefly those of the Jews, Greeks, and Romans, which are kept in cabinets as curiosities.

COKE. Fossil coal deprived of its bitumen, sulphur, or other extraneous or volatile matter, by fire.

COLCOTHAR. The brown-red oxide of iron which remains after the distillation of the acid from sulphate of iron; it is sometimes called crocus martis, and is used in polishing.

COLIN. A bird of the partridge kind, found in America, especially in Virginia.

COLLIQUAMENTUM. In physiology, the first rudiments of animal generation; an extremely transparent fluid in an egg, observable after two or three days' incubation, containing the first rudiments of the animal.

COLLODION. A solution of gun-cotton, in a mixture of alcohol and ether, used for taking portraits by the photographic process.

COLLUM. In botany, that part of a plant from which the stem and root proceed.—Among jewellers, the horizontal face or plane at the bottom of a brilliant.

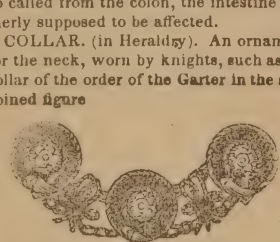
COLD. Not only the sensation of cold but the state of the body which causes the sensation. By some, cold is supposed to be a distinct substance, and that when we call a body cold, we may be understood to signify, that it absorbs caloric or heat from other bodies.

COLEOPTERA. The first order of insects in the Linnæan system, comprehending all those with four wings, as the beetle, glowworm, ladybird, leather eater, &c.

COLEWORT, or KALE. A variety of the cabbage, which thrives in the winter and improves from the action of the frost upon it.

COLIC. A violent pain in the abdomen, so called from the colon, the intestine formerly supposed to be affected.

COLLAR. (in Heraldry). An ornament for the neck, worn by knights, such as the collar of the order of the Garter in the subjoined figure



COLLATERAL (in Law). A term for what is sideways, or not direct, as collateral kinsmen, those who are not descended from one common stock, as the issue of two sons who are collateral kinsmen to one another

COLLATING. (among Book-binders) The examining the whole number of sheets belonging to a book, in order to see if they are all gathered properly.

COLLATION OF A BENEFICE. In England, the bestowing of a benefice by the bishop, when he has the right of pat

ronage; it differs from institution in this, that institution into a benefice is performed by the bishop at the presentation of another who is patron.

COLLATOR. One who compares copies or manuscripts.

COLLEAGUE. An associate in the same office or magistracy.

COLLECT. A short prayer, particularly such prayers as are appointed with the epistles and gospels, in the public service of the Episcopal Church.

COLLECTION The act of collecting or bringing things together from different quarters, as a collection of money for charitable purposes, either at the church door or from house to house; also that which is collected or brought together into an assemblage as a collection of coins, paintings, &c.

COLLEGE. A corporation or society of persons, having certain privileges, and founded in England by the king's license, as the College of Physicians, or the Colleges in the Universities. In this country, Colleges are incorporated by the legislatures. The term is here only applied to literary institutions.

COLLEGIATE. In England, an epithet for a church that is endowed, for a society, &c.

COLLIER. A vessel employed in carrying coals from one port to another: also one who works in the coal mines.

COLLUSION (in Law). A compact between two persons to bring an action one against the other, for some fraudulent or unlawful purpose.

COLOCYNTHIS. See COLOQUINTIDA.

COLOGNE EARTH. A substance used by painters, much approaching to amber in its structure, and of a deep brown.

COLON (in Anatomy). The second of the three large intestines; in Grammar, a point marked thus (:) to divide a sentence.

COLONEL. The first in command of a regiment.

COLONNADE. A range of pillars running quite round a building.

COLONY. A company of people removed from one country to another, where they form a settlement under the sanction of the government; also the place where such a settlement is formed, as the colonies belonging to Great Britain in the East and West Indies and in North America, &c.

COLOQUINTIDA. The fruit of the wild gourd, brought from the Levant. The pulp, which is light, spongy, and white, is remarkable for its intense bitterness, whence has the name of the bitter.

COLOSSUS. A statue of a prodigious size, such as that of the sun anciently in the harbour of the island of Rhodes it was placed at the entrance of the harbour with the right foot standing on one side the land, and the left on the other.

COLOURS. Were anciently supposed to be an inherent property of the coloured substance, but they are now considered to be the property of light, the elementary rays of which, being propagated to the sensorium, affect the mind with the different sensations of colour, according to their degrees of refrangibility.

COLOURS (in Painting). The various tints which are produced by the different mixture and application of certain drugs

COLOURS (in Heraldry). The tinctures with which the field or any part of the escutcheon is distinguished, namely, *or*, yellow; *argent*, white; *gules*, red; *azure*, blue; *sable*, black; and *vert*, green.

COLOURS. A military term, for the banners, flags, and ensigns used in the army

COLUMN. A cylindrical pillar, which serves either for the support or ornament of a building. It consists of a capital, which is the top or head; the shaft, which is the cylindrical part; and the base, or that on which it rests. Columns are distinguished as to their form into the Doric, Ionic, Corinthian, Composite, and Tuscan

COLUMN (in the Military Art). A long deep file of troops or baggage.

COLUMNIFERÆ (in Botany). One of Linnæus's natural orders, including the mallow-like plants

COLURES (in Astronomy). Two great imaginary circles, which intersect one another at right angles.

COMB (in Commerce) An instrument to clean, untangle, and dress flax, wool, hair, &c.; also a sea term, for a little piece of timber set under the lower part of the beakhead.

COMBINATION (in Chemistry). The intimate union of the particles of different substances, so as to form a new compound; in Mathematics, the alterations or variations in all possible ways of quantities, letters, sounds, and the like thus, two square pieces, each divided diagonally into two colours, may be arranged and combined sixty-four ways.

COMBUSTIBLES (in Chemistry) All substances which have the property of uniting with the supporters of combustion such as sulphur, phosphorus, carbon, &c

COMBUSTIBLES (in the Military Art). Combustible materials used in offensive or defensive operations.

COMBUSTION. The decomposition of bodies accompanied with light and heat

COMEDY A dramatic representation

of the light, humorous, and pleasant kind, particularly intended to ridicule the follies of men.

COMET. An opaque, spherical, and solid body, like a planet, performing revolutions about the sun in elliptical orbits, which have the sun in one of the foci. It is divided into the nucleus or dense part; the head; the coma, a faint light surrounding the head; and the tail, which is the long train of light by which these bodies are distinguished. The comet is sometimes borne in coats of arms, when it is said to be streaming.

COMMA (in Grammar). A point marked thus (,) and put between words and sentences.

COMA. In astronomy, the hairy appearance that surrounds a comet when the earth is between the comet and the sun. Comma Berenices is a constellation of the northern hemisphere, which contains forty-three stars. In pathology, a morbid condition of the brain, attended with the loss of sensation and voluntary action.

COMBRETACEÆ. In botany, a natural order of exogenous plants, chiefly tropical, consisting of trees and shrubs, of which Combretum is the type.

COMMENTARY. An explanation of the obscure passages in an author

COMMERCE. A trafficking or dealing with foreign countries, by means of exporting and importing different commodities

COMMERCE, History of. The intercourse between different nations for purposes of commerce, doubtless took place soon after the dispersion of mankind, for we find it recorded in holy writ that the Ishmaelites, who were settled in higher parts of Arabia, carried on a trade with Egypt in spices, balm, and myrrh, and that in one of their journeys Joseph was sold to them by his brethren. As the commodities in which they dealt, as gums and sweet scented woods, which were to be procured only from the East Indies, there is no doubt that these people and the Egyptians were among the first who made distant voyages and travels in the way of trade. They were succeeded by the Phœnicians, an adventurous people who were the first that raised any naval power that makes any figure in history. By their enterprise and industry they became a wealthy and luxurious people, and their two cities, Tyre and Sidon, became the emporiums of the universe. In the time of David and Solomon we find the Jewish nation availed themselves of the assistance of this people in equipping their fleets. After the destruction of old Tyre, a new city arose out of the ruins, which rivalled the other in wealth, industry, and commerce; and while in her glory she planted the colony of Carthage, on the coast of Africa, which from the convenience of her situation and the industry of her inhabitants, rose to an extraordinary pitch of prosperity. The Carthaginians made themselves masters of Spain, and of the islands of Sicily and Sardinia, discovered the greatest part of the coast of Africa and the Canary Islands, traded with Britain by the route of the Scilly Islands, and are supposed to have made their way even to America. In the mean time Egypt, under the Ptolemies, also attained a high degree of grandeur and affluence. Ptolemy Philadelphus in particular, by encouraging trade, made his people rich and himself powerful. Such was the greatness of Alexandria alone, that the produce of the customs fell little short of two millions annually. Under the Romans commerce was encouraged in every part of the world where they had any influence, as may be learned not only from historians but also from various medals and inscriptions, showing that every considerable city had several colleges or trading companies.

On the decline of the empire, commerce was, owing to the unsettled state of al Europe, and the constant irruption of the barbarous tribes, almost at a stand. About this period it happened that some straggling people, either forced by necessity or led by inclination, took their abode in a few scattered islands that lay near the coast of Italy, and as these islands were separated from each other by narrow channels, full of shallows, that prevented strangers from navigating, the inhabitants found themselves protected from all hostile inroads, and in the midst of this security they followed their pursuits with so much industry and success, that these once insignificant islands rose in the space of two centuries, that is from the sixth to the eighth century, into a great city and a powerful republic Such was the humble origin of the once potent state of Venice, which by degrees acquired an extent of commerce and a naval power that had not for a length of time any rival. She drew to herself the profits of the Indian trade, and by availing herself of every favourable conjuncture, she not only monopolized the trade of all Italy, but of all the countries in subjection to the Mahometans; but as other countries in Europe began to enlarge their commerce, Venice lost the monopoly, and this combining with her own immoderate ambition, caused the decay of her trade and the decline of her

power From the league of Cambray, which was formed against her by the powers of Europe, Venice may be said to have ceased to hold the first rank as a commercial state.

The origin of the proud city of Genoa, as it was called, was very similar to that of Venice Like Venice, she rose from an assemblage of fugitives and adventurers on the rocky, barren, and inhospitable shores of Liguria; and like her she gained, by the industry and perseverance of her inhabitants, a prodigious extent of commerce. Her merchants traded with all countries, and throve by becoming the carriers from one country to another. Her fleets were formidable and her conquests numerous, but after perpetual wars with her rival, Venice, she was at length compelled to yield the dominion of the sea, and finally lost all her consequence.

In the meantime, the trade of Germany was rising in consequence. Some commercial cities, confederating together, formed a commercial league, known by the name of the Hanseatic League, the object of which was, by combining their resources, to form a fleet for the protection of their trade with other countries. These cities not only associated among themselves, but also formed alliances with other states, as England and France, and had a code of laws which were respected and observed, under the name of the Lex Mercatoria, for a long time thoughout all Europe. In this manner the Hanse Towns acquired a considerable share of influence, and were respected by all the sovereigns in Europe. The kings of France and England granted them considerable privileges, exempting their vessels in case of shipwreck from all demands whatsoever, either on the part of the admiralty or of private persons, and respecting their flag in times of war. This good understanding between them and the states of Europe was considerably increased by the freedom with which they lent their money to different princes in time of need, particularly during the crusades, when they gave powerful succours both in ships as well as in money. This confederacy did not, however, always retain its moderation; for, as they increased in wealth and power, so they grew ambitious and domineering, and more than once they ventured to set themselves up against the states of Germany; in consequence of this, the German princes gradually withdrew the cities that were subject to themselves from the confederacy, and thus effected its dissolution. The only cities which now retain the name of Hanse Towns, and some other vestiges of the Hanseatic league, are Hamburg, Bremen and Lubeck

The next important change in the state of European commerce was brought about in Portugal and Spain, by means of the discoveries which took place in the fifteenth and subsequent centuries. To the spirit and enterprise of Emanuel, King of Portugal, we are indebted for the discovery of the Cape of Good Hope, which was effected by Vasco de Gama, in 1498, and by opening a new way to the Indies afforded to the Portuguese an opportunity of making conquests and settlements which secured to them the commerce of India, which the Venetians had hitherto enjoyed through the medium of the Arabians. The discovery of America by Columbus, which followed quickly after, paved the way for a still greater extension of mercantile enterprise, which, though at first enjoyed only by the Portuguese and Spaniards, was at length shared by other states. The Dutch, an enterprising people, were the first who wrested from the Spaniards a portion of their conquered possessions, and made so good a use of the advantages they gained as to become one of the greatest trading people in Europe. By the help of increasing wealth, they converted their little fishing villages into large and populous cities and towns. Although their country was far from being fertile, and their native commodities few or none, yet by commerce they succeeded in filling their storehouses with all the productions and manufactures of the world.

Having given this general sketch of commerce from its earliest beginnings, we must not close this account without making mention of the commerce of England, which, though among the last to avail itself of this source of wealth and aggrandizement, has by slow and gradual steps raised its commerce to a pitch which has never been surpassed by any nation. It appears that a commercial intercourse with Britain was begun at a very early period, and that the Phœnicians and Carthaginians traded with this island for the tin of Cornwall, but it is probable that the native Britons did not for many ages take any active part in this traffic, or make any attempt to share in the advantages of commerce beyond the giving their commodities to such as wished to trade with them. They had nothing better than leather or wicker boats, which were too slight to enable them to leave their shores, even so as to cross the Channel.

The Saxons made considerable endeavours to extend their intercourse with foreign nations, particularly in the time of

Alfred the Great, who sent people as far as the East for commercial purposes, as also for the sake of procuring information. After the Conquest, the English princes were for a long time too much engaged in political and military concerns to turn their attention to this subject, and little was done beyond that of giving encouragement to foreigners to settle in England, or to have dealings with the people. One provision of Magna Charta held forth indemnity and protection to foreign merchants in the passage to and fro, as also during their stay in the country.

Safe conducts were afterwards given to the English going abroad, which afforded them the opportunity of carrying on a traffic for their commodities with foreign nations. In consequence we find that staples or markets were established both in England and on the continent, where English wool, lead, and other productions were bought and sold; and as encouragement was given to the Hanseatic League, a trading company was in consequence formed in the reign of Edward I. first called the Company of Merchants trading to Calais, &c., afterwards the Merchant Adventurers of England, or the Company of Merchant Adventurers trading to Hamburg. This company, which is the first of the kind in England, was incorporated by Edward I. in 1296. In the reign of Edward III. commerce and manufactures both met with considerable encouragement, but the intercourse of foreigners with England was now more encouraged than that of Englishmen with foreign nations. In consequence the staple or mart was confined to certain towns, where, by the statute of the staple as it was called, it was ordained that foreigners might resort for the purchase of English commodities, but Englishmen were prohibited under great penalties from exporting any themselves. A number of other laws were made for the establishment and government of the staple, which formed that branch of the English law since known by the name of the Law-Merchant. For the encouragement of manufactures, protection was given to clothmakers to come from foreign parts and reside here. In the reign of Edward VI. the principle of confining commerce within the limit of the country was, in consequence of the recent discoveries, somewhat altered. An intercourse with Russia was commenced by means of some English adventurers, who, going on a voyage of discovery in order to find out a north-east passage to China, came to the port of Archangel, where they were well received by the Muscovites, whence they afterwards formed a company and received a charter to secure to themselves the trade to Russia. This company was incorporated in the reign of Philip and Mary, under the name of the Russia Company. The reign of Elizabeth was still more favourable to commercial adventures of every kind. Drake, Sir Walter Raleigh and Henry de Clifford, Earl of Cumberland distinguished themselves by their voyages and discoveries; besides which several fresh companies were formed under the auspices of this queen. The Eastland Company was incorporated under the title of the Company of Merchants to the East. The Turkey or Levant Company was also incorporated in 1581; but the most important of all the companies which had hitherto been formed was the East India Company, which was first established by charter in 1600. In the reign of William III. a new East India Company was formed, which was for a time a rival to the old one but in 1708 the two companies were consolidated into one; since which they have experienced considerable vicissitudes, and in consequence of the numerous wars in which they have been engaged their affairs were at one time so reduced that they were obliged to apply to the government for assistance, in consequence of which they have lost much of their independence, and are necessarily subject to more control than they were formerly. English commerce continued to increase from the reign of Elizabeth till the present, absorbing nearly the whole of the carrying trade of the world. The United States, competed successfully with them for a considerable period, but the close of the war in 1864, found nearly the whole transatlantic trade in the hands of British shipowners. But the immense resources of the country and its ready recuperative power must ultimately assert itself, and eventually command the markets of the world.

COMMISSION (in Law). The warrant, or letters patent by which one is authorized to exercise jurisdiction; in Military Affairs, the warrant or authority by which one holds any post in the army; in Commerce, the order by which any one trafficks or negotiates for another; also the per centage given to factors and agents for transacting the business of others

COMMITTEE (in a Legislature). A certain number of members appointed by the house, for the examination of any matter; in general, he or they to whom any matter is referred by some body for further examination.

COMMODITY. Any merchandise or ware which a person deals or trades in.

COMMODORE. An officer in the British or American navy, invested with the command of a detachment of ships of war destined for a particular purpose. The Commodore of a convoy is the leading ship in a fleet of merchantmen.

COMMON (in Law). A right or privilege claimed by more persons in another man's lands, waters, woods, &c.

COMMONALTY. The common people, all classes and conditions of people who are below the rank of nobility; the bulk of mankind.

COMMON-CARRIER. One who undertakes for hire to transport goods from place to place.

COMMON-COUNCIL. The council of a city or corporate town, empowered to make by-laws for the government of the citizens.

COMMON LAW. The law of the realm grounded on general customs or immemorial usage. In general the common law of England is common in this country.

COMMON PLACE BOOK. A sort of register, or orderly collection of things worthy to be noted in a book

COMMON PLEAS. One of the king's courts at Westminster Hall, where pleas or causes are heard between subject and subject Similar courts exist in most of the United States

COMMON PRAYER. The liturgy, or public form of prayer prescribed by the church of England to be used in all churches and chapels at stated periods. The book of common prayer used by episcopalians in the United States is so altered from the English copy as to adapt it to the local circumstances of the church.

COMMONS (in England) In a general sense, the whole people, as distinguished from the nobility; in a particular sense, the knights and burgesses who represent the Commons in parliament, whence the house in which they sit is called the House of Commons

COMMONS (in Law). See Doctors Commons.

COMMONWEALTH That form of government in which the administration of public affairs is common or open to all with few or no exceptions. It is distinguished from monarchy or aristocracy

COMMUNION. A name given to the sacrament of the Lord's supper

COMMUNION SERVICE. The office for the administration of the holy sacrament in the church of England

COMMUNION TABLE. The table erected at the east end of the church, round which the communicants kneel to partake of the Lord's supper.

COMMUTATION (in Law). The substitution of one punishment for another.

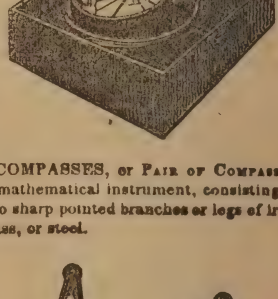
COMPANY (in Law). A society of persons forming a corporate body; in Commerce, a trading association, in which several merchants form a joint stock, with which they trade for the common interest of the stockholders, such as the East India and other companies. (See Commerce.)

COMPANY (in Sea Affairs). The whole crew of a ship, including the officers

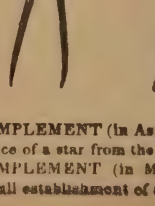
COMPARATIVE ANATOMY. The science which teaches the structure of the body in animals.

COMPARATIVE DEGREE (in Grammar), The second degree, as, better

COMPASS, or the Mariner's Compass An instrument used by mariners to point out the course at sea. It consists of a card or fly, on which are drawn the several points of the compass; the needle, or magnetic needle, a small bar of steel, which has the property of turning one of its ends to the north pole; and the box, which contains the card and needle.



COMPASSES, or Pair of Compasses A mathematical instrument, consisting of two sharp pointed branches or legs of iron, brass, or steel.

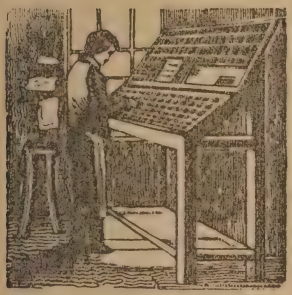


COMPLEMENT (in Astronomy) The distance of a star from the zenith.

COMPLEMENT (in Military Affairs) The full establishment of a regiment.

COMPLEMENT OF AN ARC (in Geometry). What an arc wants of 90° or the quadrant of a circle; thus the complement of 50° is 40°, and the complement of 40° is 50°.

COMPOSING. That branch of the art of printing which consists in arranging the types or letters in such an order, as to fit them for the press. This the compositor performs, by gathering a letter at a time into his composing stick, which when full he empties into a frame called a galley. Of the several lines arranged in order in the galley he makes a page, and of several pages he makes a form



COMPOSING-STICK. A compositor's tool made of iron plate, and consisting of the head, the bottom, the back, the two slides, and the two screws. While the compositor is in the act of composing he holds the composing-stick in his left hand, placing the second joint of his thumb over the slides of the stick, so as to keep the letter tight and square together, as he places them in the stick. When the composing-stick is full, he proceeds to empty it into the galley.

COMPOSITÆ. One of Linnæus' natural orders, comprehending the plants with compound flowers, as the dandelion, sunflower, &c.

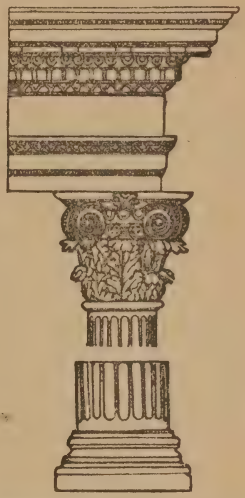
COMPOSITION (in Music). A piece of music composed according to the rules of art.

COMPOSITION (in Painting). The putting together the several parts of a picture, so as to set off the whole to the best advantage.

COMPOSITION (in Commerce) An agreement entered into between an insolvent debtor and his creditor, by which the latter accepts a part of the debt, in compensation for the whole.

COMPOSITE NUMBERS. Such numbers as some other numbers besides units will measure, as 12, which is measured by 2, 3, 4, and 6.

COMPOSITE ORDER (in Architecture) One of the five orders of architecture, so called because it is composed of the Ionic and Corinthian orders.



COMPOSITOR (among Printers) He who composes the matter for the press.

COMPOST, pronounced COMPO (in Husbandry). Several sorts of soils or earths and other matters mixed together in order to make a particularly fine kind of mould.

COMPOUND. A term in botany applied to a flower consisting of several distinct lesser flowers.

COMPOUND INTEREST. Is that interest which arises from principal and interest put together

COMPOUNDING FELONY, or THEFT BOTE (in Law). Where the party robbed takes his goods again of the thief, upon an agreement not to prosecute.

COMPOUNDING WITH ONE'S CREDITORS. Where the debtor, not being able to pay all his debts, agrees with his creditors to pay a part.

CONCAVE LENS. An epithet for glasses ground hollow on the inside, so as to reflect on the hollow side

CONCENTRATION (in Chemistry). The act of increasing the strength of fluids by volatilizing part of their water.

CONCENTRIC. An epithet for figures having one common centre

CONCERT. A musical performance in which any number of practical musicians unite in the exercise of their talent.

CONCERTO. A piece of music consisting of several parts that are all to be performed together.

CONCHOLOGY. That branch of natural history which treats of testaceous animals, or such animals as have a permanently testaceous covering, which are comprehended under the testacea in the Linnæan system.

CONCLAVE. The room in the Vatican at Rome where the cardinals assemble to choose a pope; also the assembly itself.

CONCORD (in Grammar). That part of syntax which treats of the agreement of words according to their several inflections.

CONCORD (in Law). An agreement between parties who intend to levy a fine.

CONCORD (in Music). The union of wo or more sounds in such manner as to render them agreeable.

CONCORDANCE. A sort of dictionary of the Bible, in which every word is given with references to the book, chapter, and verse in which it is to be found.

CONCORDAT. A treaty or public act of agreement, between the pope and any prince.

CONCRETION. The growing together of several substances or parts of substances into one body.

CONCRETION (in Surgery). Morbid concretions are substances formed in the animal body, as the calculus or stone, &c.

CONDENSER. A pneumatic engine or syringe, whereby an uncommon quantity of air may be crowded into a given space.

CONDITION (in Common Law). A restraint annexed to a thing, so that by the nonperformance, the party to it shall sustain loss, and by the performance receive advantage.

CONDITION (in Civil Law). A clause of obligation stipulated, as an article of a treaty or contract.

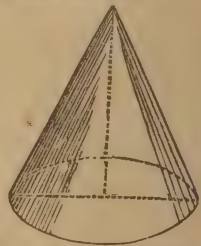
CONDUCTOR. A name given to those substances which are capable of receiving and transmitting electricity.

CONDUCTOR OF LIGHTNING. A pointed metallic rod, contrived by Dr. Franklin, to be fixed to buildings, to secure them from the effects of lightning.

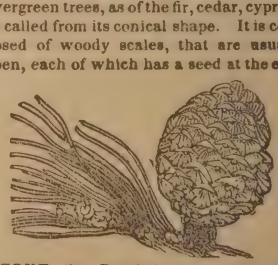
CONDUIT. A pipe for the conveyance of water to any particular part.

CONDOR. A large kind of South American vulture, measuring with the wings extended, from tip to tip, twelve or sixteen feet. It preys on birds, lambs, and kids. It is the largest bird of flight.

CONE (in Geometry). A solid figure, having a circle for its base, and its top terminating in a point or vertex. It is produced by the revolution of a right angled triangle about its perpendicular le called the axis of the cone.



CONE (in Botany). The fruit of several evergreen trees, as of the fir, cedar, cypress, so called from its conical shape. It is composed of woody scales, that are usually open, each of which has a seed at the end



CONE (in Conchology). A beautiful sort of shell, inhabited by the limax. Shells of this sort mostly bear the highest price of

any, one species being valued as high as five hundred dollars.

CONFESSION (in Theology). A public declaration of one's faith, or the faith of a public body; also a part of the Liturgy, in which an acknowledgment of guilt is made by the whole congregation. Auricular confession, a private confession or acknowledgment of one's sins, made by each individual in the Romish church to his priest or father confessor. It is so called because it is made by whispering in his ear

CONFERVACEÆ. A natural order of Algæ, or water plants, of which the conferva is the genus. Confervites are fossil algæ, belonging to the order. Confervoid is a botanical term applied to those plants which have the appearance of Confervæ.

CONFLUENT. In pathology, a term applied to those pustules on the skin which are so numerous as to form patches, the matter of which runs together.

CONFLUENCE. The meeting of two rivers, or the place where they meet.

CONGELATION A condensation of any fluid by means of cold.

CONGER, or CONGER EEL. An eel of an extraordinary size, and extremely voracious, which preys on carcasses, and other fish.

CONGREGATION (in Ecclesiastical Affairs). An assembly of persons who meet together for purposes of divine worship; (in Physics) a term for the least degree of mixture, in which the parts of the mixed body do not touch each other in more than one point.

CONGRESS. An assembly of envoys, commissioners, deputies, &c. from different courts, who meet to agree on matters of general interest; also an assembly of the deputies from the different states in the republics of America. The Congress of the United States consists of a Senate and House of Representatives. Each state sends two senators, and one representative for every 40,000 inhabitants In the slave states five slaves are reckoned as three freemen. Senators are chosen for six years, representatives for two.

CONGREVE ROCKET. An invention so called from the inventor, Sir William Congreve, by which balls and other combustibles are discharged to an immense distance.

CONIC SECTIONS. Curve lines and plane figures produced by the intersection of a plane with a cone. These sections are derived from the different directions in which the solid cone is cut by a plane passing through it; they are the triangle circle, ellipse, parabola, and hyperbola

The doctrine of Conic Sections, which is one of the abstrusest branches of geometry, was particularly cultivated by the ancients. Aristeus is said to have composed five books relating to this subject, but they have not been handed down to us. The most ancient treatise extant is that of Apollonius, in eight books, the first four of which is said to have been written by Euclid, and afterwards perfected by Apollonius, with the addition of four other books.

CONIFERÆ, or CONIFERS. An order of plants, which, like the fir, pine, and cedar, bear cones or tops in which the seeds are contained.

CONIMA. A very fragrant gum-resin, obtained in British Guiana.

CONSENSUAL. In physiology, a term applied to movements, contrary to, or independent of, the will, which arise from previous contrary movements, as in the contraction of the iris when the eye is voluntarily directed upwards; excited or caused by sensation.

CONJUGATE. An epithet to denote the junction of two lines, as a conjugate axis, that which crosses another axis

CONJUGATING (in Grammar) The act of going through the inflections of a

verb according to its several moods, tenses, and persons.

CONJUGATION (in Grammar). The moods, tenses, and persons of a verb coupled together in regular order.

CONJUNCTION. A term in Astronomy for the meeting of two planets in the same degree of the zodiac, which is marked thus (☌).

CONJUNCTION (in Grammar). A part of speech which joins words and sentences.

CONNOISSEUR. A person well versed in any art or science.

CONOID (in Geometry). A figure resembling a cone.

CONQUEROR. In a general sense, one who has gained a battle or any thing by means of fighting; particularly applied to William I. who succeeded to the throne of England after having gained the battle of Hastings.

CONSANGUINITY. Kindred by blood and birth between persons descended from the same common stock.

CONSCRIPT FATHERS. An appellation for the Roman senators, so called because they were enrolled from the equestrian order into the list of senators.

CONSCRIPTS. Recruits in the French army.

CONSEQUENCE. That which follows from any principle by way of inference; among logicians, the last part or proposition of an argument, in distinction from the antecedents, being something gathered from a preceding argument.

CONSEQUENT (in Geometry). The latter of two terms of proportion, in distinction from the former, or antecedent.

CONSIGNMENT. The sending or delivering over of goods to another person.

CONSISTORY, or CONSISTORY COURT. In England, the session or assembly of ecclesiastical persons held by the bishop or his chancellor.

CONSONANCE (in Music). An agreement of two sounds.

CONSONANT (in Grammar). A letter which cannot be sounded by itself without the help of a vowel; in Music, an epithet for that interval which produces consonant concords.

CONSTABLE. A civil officer, anciently of great dignity, as the lord high constable of England, and also the constables or keepers of castles, &c.; now an inferior officer of justice.

CONSTELLATION. An assemblage of fixed stars, imagined to represent the form of some creature or other object, as a bear, a ship, and the like; whence they have derived those appellations which are convenient in describing the stars. The division of the heavens into constellations is very ancient, probably coeval with astronomy itself. Frequent mention is made of them by name in the sacred writings as in the book of Job, and in the prophecy of Amos. Some of the constellations are also mentioned by Homer and Hesiod, who flourished above 900 years before Christ; and Aratus, who lived about 277 years before Christ, professedly treats of all such as were marked out by the ancients, and were afterwards admitted into the Almagest of Ptolemy. These were forty-eight in number, called the Old Constellations, to which have since been added others, called New Constellations.

CONSTITUENT (in Law). In England, one who by his vote, constitutes or elects a member of parliament. The term is also applied to voters in the United States.

CONSTITUENTS (in Physics). The elementary parts of any substance.

CONSTITUTION (in Law). Properly, any form of government regularly constituted; in a particular sense, the mixed and popular form of government in England, consisting of king, lords, and commons, or the free constitution of the United States

CONSTITUTION (in Civil Law). A law made by some king or emperor; and in the canon law, the same as an ecclesiastical law or canon.

CONSTITUTION (in Medicine). The temperament of the whole body, arising from the quality and proportion of the parts

CONSUL. A chief magistrate among the Romans, of which there were two that were elected every year.

CONSUL An officer commissioned by government, to reside in foreign countries of any considerable trade, to facilitate and despatch business and protect the merchants of the nation.

CONSUMPTION. The wasting and decay of the body by disease

CONTEMPT (in Law). A disobedience to the rules, orders, or process of a court.

CONTINENT. The main land, as distinguished from the sea.

CONTORTÆ One of Linnæus' natural orders, including plants with a single twisted petal.

CONTOUR. The outline of a figure.

CONTRABAND GOODS. Goods prohibited by law to be exported or imported.

CONTRACT A covenant or agreement between two or more persons, with a lawful consideration or cause

CONTRACTION. In general, the diminishing the extent or dimensions of a body.

CONTRACTION (in Surgery). The shrinking up of the muscles or arteries.

CONTRACTION (in Grammar) The reducing two syllables into one.

CONTRACTION (in Arithmetic) The shortening of operations.

CONTRAST (in Painting). The due placing the different parts and objects of a figure, that they may be suitably opposed to each other.

CONTRAVALLATION, Line of. A line or trench, cut round a place by the besiegers, to defend themselves against the sallies of the garrison.

CONTRAVENTION (in Law). The infringement of a contract.

CONTROLLER (in Law). An overseer or officer appointed to control or oversee the accounts of other officers.

CONTUMACY (in Law). A refusal to appear in court when legally summoned.

CONVALESCENCE. That period betwixt the departure of a disease, and the recovery of one's health.

CONVENTICLE. A term applied first to the little private meetings of the followers of John Wickliffe, and afterwards to the religious meetings of the Nonconformists.

CONVENTION (in Law). Any assembly of the states of the realm or their deputies; in military affairs, an agreement entered into between two bodies of troops, opposed to each other.

CONVERGING LINES. Lines which continually approximate.

CONVERGING RAYS (in Optics). Those rays that issue from divers points of an object, and incline towards one another until they meet.

CONVEX. Curved, or protuberant outwards; as a convex lens, mirror, &c

CONVEYANCE (in Law) A deed or instrument by which lands, &c. are conveyed or made over to another.

CONVEYANCER. One who follows the business of conveyancing, or drawing up conveyances.

CONVOCATION. In England, an assembly of the clergy, consisting of an upper and lower house, which meet when the parliament meets, to consult on the affairs of the church.

CONVOLVULUS or Bindweed. A plant so called, because it creeps up and twists itself round whatever is near it. Some few sorts are cultivated in gardens, and bear a beautiful blue flower.

CONVOY. A sea term, for ships of war which accompany merchantmen in time of war, to protect them from the attacks of the enemy; in military affairs, a detachment of troops employed to guard any supply of money, ammunition, &c.

COOK. One who practises the art of cookery. The company of cooks in England was incorporated in the fifteenth century

COOLER. A vessel used by brewers, for cooling the beer after it is drawn off.

COOMB. A measure of corn, containing four bushels.

COOP. A place where fowls are kept confined; also a vessel made of twigs, in which fish are caught, and a barrel or vessel for keeping liquids.

COOPER. A maker of tubs, coops, or barrels. The company of coopers in England was incorporated in the reign of Henry VII.

COOPERY The art of making tubs or barrels with boards bound by hoops.

COOT. A water fowl, mostly of a black colour, called also a Moor Hen. These birds frequent lakes and still rivers, where they make their nests among the rushes, &c. floating on the water, so as to rise and fall with it.

COPAL. An American name for all odoriferous gums, but particularly applied to a resinous substance imported from Guinea. It is hard, shining, transparent, and citron coloured.

COPERNICAN SYSTEM. A particular system of the sphere first proposed by Pythagoras, and afterwards revived by Copernicus, a Polish astronomer. According to this system the sun is supposed to be placed in the centre, and all the other bodies to revolve round it in a particular order; which notion is now universally adopted, under the name of the Solar System

COPING. The stone covering on the top of a wall.

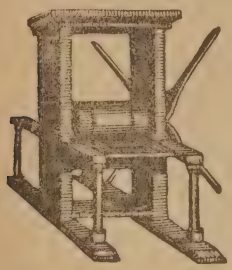
COPPER. A metal next to iron in

specific gravity, but lighter than gold, silver, or lead. It is one of the six primitive metals.

COPPERAS. A name given to blue, green, and white vitriol: it is a factitious sulphate of iron.

COPPERPLATE. A plate on which figures are engraven; also the impression which is taken off the plate on paper, by means of printing.

COPPERPLATE PRINTING. The process of taking engravings from copperplates, by means of a rolling press, as in the subjoined cut.



COPPERSMITH. An artisan who works copper into different utensils.

COPPICE, or COPSE. A small wood, consisting of underwood.

COPULA (among Logicians). The verb that connects any two terms in an affirmative or negative proposition, as, God made the world; made is the copula.

COPULATIVE (in Grammar). An epithet for such conjunctions as join the sense as well as the words; as and, or, &c

COPY (in Law). The transcript of an original writing.

COPY (among Printers). The original MS. or the book from which the compositor sets his page.

COPYHOLD (in Law). In England, a sort of tenure by which the tenant holds his land by copy of court roll of the manor at the will of the lord.

COPYRIGHT (in Law). The exclusive right of printing and publishing copies of any literary performance, which is now confirmed by statute, to authors or their publishers, for a certain number of years, that is to say, in England for twenty-eight years in all cases, whether the author survive that period or not; and to the end of the author's life if he live beyond that period; besides, as an action lies to recover damages for pirating the new corrections and additions to an old work publishers may acquire almost a perpetual interest in a work by republishing it with additions and annotations. In the United States, the copyright law gives to the author, the exclusive right to his productions for four years, with the privilege of renewing it for the same period, if he is living within the last six months of the term.

CORAL. A hard, brittle, calcareous substance, which was formerly supposed to be of a vegetable nature, but is now found to be composed of a congeries of animals, endued with the faculty of moving spontaneously. They are distinguished by the form of their branches, and are found in the ocean, adhering to stones, bones, shells, &c. The islands in the South Sea are mostly coral rocks covered with earth. The coral fishery is particularly followed in the Mediterranean, on the coast of France and Algiers, where the red coral most abounds.

CORBEL. A shoulder piece jutting out in walls to bear up a post.

CORCLE, or CORCULUM (in Botany). The essence of the seed, or the rudiment of the future plant.

CORD OF WOOD. A parcel of firewood, four feet broad, four feet high, and eight feet long.

CORINTHIAN ORDER (in Architecture). The noblest and richest of the five

orders, so called because columns were first made of that proportion at Corinth. Its capital is adorned with two rows of

leaves, between which arise little stalks or caulicoles, forming sixteen volutes.

CORDELIERS In Catholic countries, an order of monks, so called because they wear a cord full of knots about their middle.

CORDOVAN. A sort of leather made of goat skin at Cordova in Spain.

CORK TREE. A glandiferous tree of the oak kind, having a thick, spongy, and soft bark known by the name of cork. It grows abundantly in Italy, Spain and other parts in the South of Europe.

CORMORANT, or CORVORANT. An exceedingly voracious bird of the pelican tribe. It builds on the highest cliffs hanging over the sea

CORN. A general term in England for wheat. Sometimes, for all grain of which bread is made. In the United States, it is a common term for Indian corn. See MAIZE.

CORNEA. One of the coats of the eye, which is transparent in the fore part, to admit the rays of light.

CORNELIAN. A precious stone, of a flesh colour, of which rings are made.

CORNET (in Military Affairs). An instrument very similar to a trumpet, which is used in the army; also a commissioned officer in a troop of horse or dragoons.

CORNFLAG. A plant having a double tuberose root, with leaves like the fleur de lis, and a flower consisting of one petal, shaped like the lily.

CORNFLOWER. A plant that grows wild among the corn.

CORNICE. Any moulded projection that crowns or finishes the part to which it is affixed, as the cornice of a room, a door, &c.

CORNISH CHOUGH. In England, a sort of crow, of a fine blue or purple black colour, with red beak and legs It was reckoned the finest bird of its kind, and therefore borne in coats of arms.

CORNUCOPIA, or THE HORN OF PLENTY. Fabled to be the horn which Hercules broke off from Achelous' head. It was filled by the nymphs with all manner of flowers and fruits, and made the emblem of abundance.

COROLLA. The leafy parts of a flower which is marked with divers colours. Each leaf or division of the corolla is called a petal

COROLLARY. A consequence drawn from some proposition already proved or demonstrated.

CORONARIÆ. One of Linnæus' natural orders of plants, containing those of the libaceous tribe, which are most fitted for making garlands.

CORONATION. The act or solemnity of crowning a king; also the ceremony of investing the pope with his sacerdotal ensigns and dignity.

CORONER. An officer whose particular duty it is to make inquisition into the untimely death of any person.

CORONET (in Heraldry) A small crown worn by the nobility.

CORONET, or CORNET (in Farriery) The upper part of a horse's hoof.

CORPORAL (in Law). An epithet for any thing that belongs to the body, as corporal punishment, in distinction from a fine; a corporal oath, so called because the party taking it, is obliged to lay his hand on the Bible.

CORPORAL (in Military Affairs). A rank and file man, with superior pay to a common soldier, and with nominal rank under a serjeant.

CORPORATION. A body politic or incorporate, so called because the persons composing it, are made into one body.

CORPOSANTO, or CORPOSANT Small luminous balls supposed to be electrical which play about the rigging of ships in stormy weather and are regarded with superstitious awe, by sailors.

CORPS. A French term for any body of forces forming the division of a grand army.

CORRECTION (in Printing). The correcting of proof sheets as they come from the compositor's hands, in order to free them from all faults.

CORRECTIVES. Medicines which serve to correct the qualities of other medicines.

CORRECTOR. The person appointed in a printing office to correct the proofs as they come rough from the compositor's hands

CORRIDOR (in Fortification). A covert way round a fortress; in Architecture, a long gallery leading to several chambers.

CORROSIVES. Saline menstruums, which have the property of dissolving bodies, as burnt alum, white vitriol.

CORROSIVE SUBLIMATE OF MERCURY. An oxymuriate of mercury, and an extremely acrid and poisonous preparation.

CORRUPTION OF BLOOD. An infection growing to the blood, estate, and issue of a man attainted of treason.

CORSAIR. A pirate or sea roboer, particularly on the coast of Barbary.

CORSLET. An ancient piece of armour with which the body was protected.

CORTES. The states or the assembly of the states of Spain and Portugal

CORTEX. The outer bark of a plant.

CORUNDUM. A mineral of the sapphire kind, which is found in the East Indies, especially in Pegu and the island of Ceylon

CORUSCATION. A gleam of light issuing from anything, particularly that which is produced by the electrical fluid.

CORVUS (in Astronomy). A constellation in the southern hemisphere.

CORYDALES. One of Linnæus' natural orders of plants, containing those which have helmet-shaped flowers.

CORYMB (in Botany). A mode of flowering, in which the lesser flower stalks are produced along the common stalk on both sides, rising to the same height.

CO-SECANT (in Geometry). The secant of an arc, which is the complement of another arc to ninety degrees.

COSMETICS. Preparations which whiten and soften the skin.

COSMOGRAPHY. The science of describing the several parts of the visible world.

COSMOPOLITE. A citizen of the world.

COSSACKS. Irregular troops attached to the Russian army; a predatory tribe which inhabit the banks of the Nieper and Don.

COSTS OF SUIT. The expenses attending a law suit, which are in part recoverable from the party who loses the cause

COTTON A sort of wool or fax, which encompasses the seed of a tree that is much cultivated in Central Africa, in the Indies and particularly in America. It only flourishes in warm climates. The cloth which is manufactured from this wool when spun, is also called cotton

COTTONGRASS. A perennial of the grass tribe, so called, because its seeds have a downy substance attached to them which resembles cotton, and has been used in its stead.

COTTONTHISTLE. An herbaceous plant, with a biennial root, which is so called because it has downy leaves.

COTYLEDONS (in Botany). The lobes of the seed, of which there are mostly two They are destined to nourish the heart of the seed.

COUANDO. A species of small South American porcupine.

COUCH. A seat, or small moveable bed to lie on.

COUCH (in Husbandry). A layer or heap of malt or barley.

COUCH (in Painting). The ground or basis on which the colour lies.

COUCHGRASS. A noxious weed, which spreads very fast in arable land, and chokes every thing else that is sown.

COUCHING (in Surgery). The removing the opaque lens out of the axis of vision, so as to restore the sight.

COVENANT (in Law) An agreement or consent of two or more, by deed or writing.

COVERT. A thicket or shady place for deer or other animals.

COVERT-WAY (in Fortification). A space of ground level with the field on the edge of the ditch, ranging quite round the works.

COVERTURE (in Law). The state of a married woman who is under the power and protection of her husband, whence she is called a feme coverte.

COUGAR. The largest animal of America of the cat kind, and sometimes called the American Lion. In South America it is called Puma, in North America, Panther. It is of an ash colour, and so powerful, that it will bear the body of a man up a tree.

COVING (in Architecture). The projection in houses beyond the ground plot.

COUNCIL (in Law). An assembly of the different members of any government who meet to consult about affairs. In England that is called the Privy Council where'in the king himself and his privy counsellors meet, in the king's court or palace to deliberate on affairs of state. When the council is composed only of cabinet ministers, or the king's most confidential servants, it is called a Cabinet Council.

COUNCIL (in Ecclesiastical Affairs). The same as the synod.

COUNCIL OF WAR (in Military Affairs). An assembly of the chief officers in the army or navy, called by the general or admiral in particular emergencies, to concert measures for their conduct.

COUNTERFEIT. A fraudulent imitation of any thing, made so as to pass for genuine, as counterfeit coin.

COUNTERMINE. A mine made by the besieged, in order to blow up the mine of the besiegers.

COUNTERSCARP (in Fortification). That side of the ditch which is next the camp, and faces the body of the place.

COUNTER-TENOR (in Music). One of the middle parts, so called because it is, as it were opposed to the tenor.

COUNTINGHOUSE. An office in which a merchant transacts his business.

COUNTRY DANCE (in Music). A lively pointed air calculated for dancing.

COUNTY. One of the ancient divisions of England, which by the Saxons were called shires; England is divided into forty counties or shires, Wales into twelve, Scotland into thirty. Each of the United States is also divided into counties.

COUP DE MAIN. A sudden unpremeditated attack.

COUP D'ŒIL. The first glance of the eye, with which it surveys any object at large.

COUP DE SOLEIL. Any disorder suddenly produced by the violent scorching of the sun.

COUPLE. A band with which dogs are tied together.

COUPLE-CLOSE (in Heraldry). An ordinary, so termed from its enclosing the chevron by couples, being always borne in pairs, one on each side a chevron.

COUPLES (in Building). Rafters framed together in pairs with a tie.

COUPLET. The division of a hymn, ode, or song, wherein an equal number, e. an equal measure of verses is found in each part.

COURANT. An epithet for any beast, represented in an escutcheon in a running attitude.

COURSE. A sea term, for that point of the horizon or compass for which a ship steers.

COURSE (in Masonry). A continued range of bricks or stones of the same height.

COURSE OF EXCHANGE (in Commerce). The current price or rate at which the coin of one country is exchanged for that of another; which, as it depends upon the balance of trade and the political relations which subsist between the two countries, is always fluctuating.

COURSER. A race horse.

COURSING. The pursuing of any beast of chase, as the hare, &c. with greyhounds

COURT (in Law). In monarchical countries, the king's palace or mansion, in common use, the place where justice is judicially administered.

COURTS OF CONSCIENCE. Courts for the recovery of small debts.

COVY. An assemblage of wild fowl, particularly partridges.

COW. The female of the ox kind, which is kept for her milk and her calves.

COWKEEPER. One who keeps cows for the purpose of selling the milk.

COWPOX. A substitute for the small pox. It is taken from the udder of the cow, and used in that sort of inoculation now known by the name of vaccination.

COWRY. A testaceous animal, which is said to have the power of leaving its shell and forming a new one. These animals live in sand at the bottom of the sea. The shell is used as a coin in India.

COWSLIP. A plant which grows wild in the meadows, and bears a pretty yellow flower.

C. P. S. (in England). Custos privati sigilli; i. e. keeper of the privy seal.

CR. An abbreviation for creditor.

CRAB (in Astronomy). Cancer, one of the signs of the zodiac.

CRAB (in Botany). A wild apple tree, and also the fruit of hat tree.

CRAB (among Shipwrights). An engine with three claws for launching of ships.

CRAB'S EYE. A stone found in the craw fish, resembling an eye.

**CRAB.** A sort of shell fish, which every year cast off their old shells, with much pain and difficulty.

**CRADLE.** A moveable bed for a child.

CRADLE (with Surgeons). A wooden machine to lay a broken leg in after it has been set.

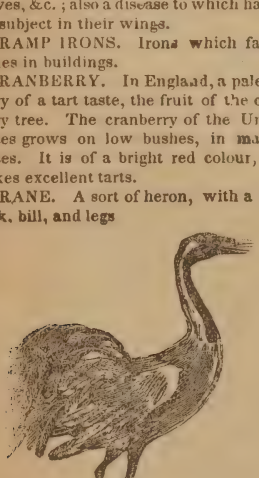
CRADLE (with Shipwrights). A frame of timber raised on each side of a ship, for the more convenient launching of her.

CRAMP. A spasmodic affection, which causes a violent distortion of the muscles, nerves, &c.; also a disease to which hawks are subject in their wings.

CRAMP IRONS. Irons which fasten stones in buildings.

CRANBERRY. In England, a pale red berry of a tart taste, the fruit of the cranberry tree. The cranberry of the United States grows on low bushes, in marshy places. It is of a bright red colour, and makes excellent tarts.

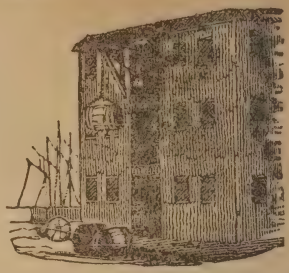
CRANE. A sort of heron, with a long neck, bill, and legs



**CRANESBILL.** The English name for the geranium.

CRANIOLOGY. The science which professes to discover men's faculties and characters, from the external appearances of the skull

**CRANE.** A machine, with ropes, pulleys, and hoops, for drawing up heavy weights.



**CRANIUM** The skull, or superior part of the head.

CRANK. A machine resembling an elbow, projecting from an axis or spindle also a piece of brass work of a similar shape, on which the bell wire is fixed, so as to move the bell.

CRAPE. A light transparent stuff, resembling gauze

CRATE. A large case made of open bars, in which earthen ware is packed.

CRATER. The mouth of a volcano from which the fire issues.

CRAY FISH, or CRAW FISH. A small sort of lobster.

CRAYON. A small pencil of any sort of colouring stuff, made into a paste and dried.

CREAM OF TARTAR. The common white tartar freed from its impurities; a salt prepared from the lees of wine.

CREDIT (in Commerce). A mutual loan of merchandises, &c. Letters of Credit, letters given by merchants to persons whom they can trust to draw money from their correspondents.

CREEK. A small inlet, bay, or cove; a recess in the shore of the sea, or of a river. Creek Indians is the name applied to a large tribe of the native inhabitants of the United States of America, who formerly occupied all the countries lying north of lat. 31 deg.

CREMATION. The burning of the dead, according to the custom of many ancient nations.

CREOLE. A native of Spanish America or the West Indies, descended from European ancestors.

CREASOTE. An oily liquid obtained from wood-tar, consisting of carbon, oxygen, and hydrogen, and so named from its property of preserving animal substances.

CREATIN. A crystallizable substance obtained from muscular fibre.

CREMAILLERE. In fortification, an indented zigzag line.

CREPITATION. The crackling noise made by some salts during the process of calcination.

CRESS. A garden salad.

CREW. The company of sailors belonging to a vessel.

CRICKET. A little insect that haunts fireplaces and ovens.

CRIER. An officer who cries or makes proclamation

CRIMES. Offences against morals, as far as they are prohibited by law.

CRIMPS. Persons who used formerly to decoy others into the land or sea service.

CRISIS. That stage of a disorder from which some judgment may be formed of its termination.

CROCODILE. An amphibious animal, and the largest of the lizard tribe, which inhabits the rivers of Africa and Asia. It is covered with hard scales, that cannot easily be pierced, except under its belly.

CROCUS. A bulbous plant, that flowers very early in spring.

CROP. The craw of a bird; also the produce of what is sown in a field.

CROSS. A gibbet, on which the Romans used to nail malefactors by the hands and feet

CROSS (in Heraldry). The most ancient and the noblest of all the honourable ordinaries, formed by the meeting of two perpendicular with two horizontal lines, so as to make four right angles in the figure of a cross, such as the cross batonne in the subjoined figure

CROSS The name given to the right side of a coin, in distinction from the pile or reverse.

CROSS (in Architecture). Any building which is in the figure of a cross.

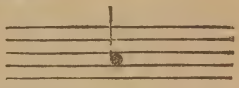
CROSS BOW. A kind of bow formerly

much used which was strung and set in a shaft of wood, with a trigger, &c.

CROSSBILL. A sort of Grosbeak bird so called because the mandibles of its beak cross each other.

CROSS-EXAMINATION (in Law) A close and rigid examination on the part of the adversary, consisting of cross questions, in order to elicit the truth.

CROTCHET (in Music). Half a minim, marked thus.



CROTCHET (in Printing). Marked thus [ ], to separate what is not the necessary part of a sentence.

CROUP. The hindmost part of a horse

CROUPER. A leathern strap fitted to go under the tail of a horse, to keep the saddle in its place.

CROW. A sociable noisy bird, that feeds partly on carrion

CROW (among Mechanics). An iron instrument that is used as a lever for raising weights.

CROWN. In England, a coin, in value five shillings, so called from the figure of the crown which was originally given upon it.

CROWN (in Anatomy). The vertex or highest part of the head.

CROWN (in Architecture). The uppermost member of a cornice.

CROWN. A cap of state worn by sovereign princes The crown of England is called St. Edward's crown, because it is made in imitation of the ancient crown supposed to have been worn by that monarch. That, now in use, was made at the Restoration, for the coronation of Charles the Second

CROWN (among Jewellers). The upper work of the rose diamond

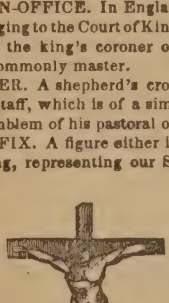
CROWN-GLASS. The finest sort of window glass.

CROWN-IMPERIAL. A well known beautiful flower, the root of which is perennial.

CROWN-OFFICE. In England, an office belonging to the Court of King's Bench, of which the king's coroner or attorney there is commonly master.

CROZIER. A shepherd's crook; also a bishop's staff, which is of a similar form, and an emblem of his pastoral office.

CRUCIFIX. A figure either in statuary or painting, representing our Saviour on the cross



CRUCIFIXION. The act of nailing or fixing to a cross; the suffering of being crucified.

CRUCIBLE. A melting pot used by chemists for the melting of metals and minerals.

CRUISE A voyage or expedition in quest of an enemy's vessels

CRUISER A vessel appointed for cruising.

CRUOR. Coagulated blood.

CRUSADES. The expeditions undertaken by the princes of Christendom for the conquest of the Holy Land, in the twelfth and three following centuries. On these occasions, every soldier bore a crucifix on his breast, as an emblem of spiritual warfare.

CRUSTACEOUS SHELL FISHES Fishes covered with shells which are made up of several pieces and joints; such as crabs, lobsters, crayfish, &c. in distinction from the testaceous fish, as oysters.

CRYPTOGAMIA. One of the classes of plants in the Linnæan system, comprehending those whose fructification or flower is too concealed or minute to be observed by the naked eye, as the mosses, the algæ or seaweeds, the ferns, and the fungi or funguses.

CRYPTS. Subterraneous places where the martyrs were buried, and the primitive Christians performed their devotions; also underground chapels, such as the crypt under St. Paul's and other churches which took their rise from this practice.

CRYSTAL, or Rock Crystal (in Mineralogy). A transparent stone as clear as glass. It is found in Iceland, Germany, and France, and belongs to the quartz or silliceous genus; also a factitious body cast in the glass-houses, called crystal glass which is very brittle, and burns with little or no flame.

CRYSTAL (in Chemistry). That part of a salt which assumes a regular and solid form, on the gradual cooling of its solution

CRYSTALLINE HUMOUR. A pellucid humour of the eye, so called from its transparency like crystal

CRYSTALLIZATION. The reducing of any salt into a regular form, by dissolving it in a menstruum, and allowing it to cool until it shoots into the bodies called crystals.

CUB. The young of some particular beasts, as of a fox and a bear

**CUBE** (in Geometry). A regular solid body, supposed to be generated by the motion of a square plane along a line equal and perpendicular to one of its sides. It is enclosed by six equal sides or faces, which are square, as in the annexed figure A die is a small cube

**CUBE** (in Arithmetic). The third power of any number, produced by multiplying the number into itself, and then again into the product, as $3\times3=9\times3=27$, the cube.

CUBE ROOT. The side of a cube number; thus 3 is the cube root of 27.

CUBIT. A measure equal to about 1 foot 9 inches

CUCKOO. A bird which is heard about the middle of April, and ceases to sing at the end of July. It deposits its eggs in the nests of other birds, generally in that of the hedgesparrow. The American Cuckoo differs in its note from the European bird of that name It is also smaller in size

**CUCKOO-SPITTLE** A white froth or spume, very common on the lavender and other plants in the spring, which forms the nidus of a sort of cicada.

CUCURBITACEÆ. One of Linnæus's natural orders of plants, comprehending those which resemble the gourd, as the cucumber, the melon, &c.

CULM (in Botany). The stalk or stem of corn or grasses.

CULM (among Miners). A sort of coal in Wales.

CULMINEÆ. One of the Linnæan natural orders of plants, consisting of the grasses.

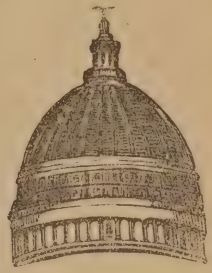
CULPRIT (in Law). A word of form, applied in court to one who is indicted for a criminal offence. It is as much as to say, in French, 'culpable prit, found or considered guilty.'

CUMMIN SEED. A long, slender seed of a rough texture, unctuous when bruised of a strong smell and an acrid taste.

CUPBEARER (in England). An officer of the king's household, who was formerly an attendant at a feast

CUPEL. A chemical vessel made of earth, ashes, or burnt bone, in which assay masters try metals

CUPOLA. A roof or vault rising in a circular form, otherwise called the Tholus or Dome, as the cupola of St. Paul's Cathedral, here represented.



CUPPING (in Surgery). The operation of applying the cupping-glass to the fleshy parts of the body, for the purpose of drawing away blood, or humours.

CURASSOW. A species of bird of which there are several varieties in South America, and the West Indies, of which the Cashew Curassow is the largest This bird was formerly domesticated in some parts of Europe.

CURATE. Properly, one who has the cure of souls; now applied in England to one who officiates for hire in the place of the incumbent.

CURB OF A BRIDLE A chain of iron that runs over the horse's beard

CURFEW. Literally, cover feu or fire a law introduced from Normandy into England by William the Conqueror, that all people should put out their fire and lights, at the ringing of the eight o'clock bell.

CURLEW. An European water fowl of a gray colour, with a large beak.

CURRANT. The fruit of a shrub having no prickles; the leaves of this plant are large, and the fruit, which is either black, red, or white, is highly esteemed; also a dried fruit that comes from the Levant.

CURRENCY (in Law). Paper money issued by authority, and passing current instead of coin; also, in general, any sort of money that passes current by authority, as the metallic currency, signifying the coin of the realm.

CURRENTS. Impetuous streams.

CURRIER. A dresser of tanned leather to make it pliable and fit for use. The Company of Curriers in England was incorporated in the reign of Henry VI.

CURRY-COMB. An iron sort of comb for the dressing of horses.

CURSITOR. In England, an officer in chancery, who makes out original writs for any particular county.

CURTAIN (in Fortification). The front of a wall or fortified place, lying between two bastions.

CURVE. A line whose parts incline different ways.

CUSP. Properly, the point of a spear

CUSP (in Astronomy). A term for the horns of the moon.

CUSTOM (in Law). A duty on the importation or exportation of goods

CUSTOS ROTULORUM, or KEEPER OF THE ROLLS. In England, he that has the keeping of the records of the sessions of the peace.

CUT. An engraving on wood.

CUTLER. A maker and seller of knives, and all cutting instruments.

CUTPURSE. A sort of thieves who rob by cutting purses.

CUTTER. A kind of boat attached to a vessel of war, which is rowed with six oars, and is employed in carrying light stores, passengers, &c. In the United States, the term revenue cutter, is applied to small fast sailing vessels, used to watch harbours for the prevention of smuggling.

CYANOGEN (in Chemistry). Carbon combined with azote

CUTTLE-FISH. A sea fish furnished with many suckers and holders for securing its prey. It emits a black fluid used in making Indian ink

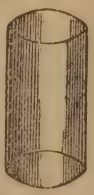
CYBELE (in Heathen Mythology). The daughter of Cœlus and Terra, wife of Saturn, and mother of the gods; she is always represented with a turreted head and accompanied with a lion

CYCLE. A continual revolution of numbers, as applied to a series of years which go on from first to last, and then return to the same order again.

CYCLOID. A curve generated by the rotation of a circle along a line.

CYCLOPÆDIA. See ENCYCLOPÆDIA

CYLINDER. A figure conceived to be generated, by the rotation of a rectangle about the side.



CYLINDER (in Gunnery). The whole hollow length of a great gun; the bore.

CYME. Properly, a sprout or shoot: also a sort of flowering, where the florets do not all rise from the same point.

CYMOSÆ. One of Linnæus's natural

CYNICS In ancient history, snarling philosophers, who valued themselves on their contempt of riches, of arts sciences, and amusements. Diogenes was one of this sect.

CYNOSURE. The constellation of the Little Bear, to which, as containing the north star the eyes of mariners and travelers were in former times, continually turned. Hence the poets have used the term to denote anything to which attention is strongly directed.

CYPHONISM. A species of punishment frequently used by the ancients, which consisted in besmearing the criminal with honey, and exposing him to insects.

CYPRÆIDÆ. A family of Marine gasterpods (the Cowries), with involute and highly-enamelled shells, of which the Cypreæa is the type.

CYPRESS. A genus of plants or trees valued for the durability of their wood; the emblem of mourning for the dead, cypress branches having been anciently used at funerals.

CYTOBLAST. In botany, the nucleus cellule, or assimilative force from which the organic cell is developed. These nuclei appear like dark spots, which may be seen in the fluids of the growing parts of all plants.

CYTOBLASTEMA. In physiology, the viscid fluid in which animal and vegetable cells are produced, and by which they are held together.

CYTOGENESIS. In physiology, the development of cells in animal and vegetable structures.

## D

As a numeral, D represents 500; and when a dash or stroke is placed over it, it denotes 5000

DACTYLIOGRAPHY. The art of engraving on gems

DACTYLOLOGY The art of communicating ideas by spelling words with the fingers.

DACTYLONOMY. The art of numbering with the fingers.

DACTYLOPTERUS. In ichthyology, a genus of fishes covered with large scales and the head long and flattened; fam. Loricata.

DADO. In architecture, the part in the middle of the pedestal between the base and cornice.

DAGUERREOTYPE. A process invented by Daguerre, by which images from the lens of a camera obscura are fixed on metal plates.

DAGOBA. In India and the East, a hemispherical dome of earth or stone with a small square erection on its top called a tee.

DALIAN PROBLEM. In mathematics, the duplication of the cube, or the process of finding the side of a cube double that of another one.

DAMASK STEEL. In the arts, a fine kind of steel from the Levant, of a streaky mottled appearance, used in the manufacture of the best sword and scimitar blades. Damaskeening is the art of adorning steel or iron with inlaid gold or silver, chiefly used for sword-blades or locks of pistols.

DANAE. A planet first observed by Goldsmidt in 1860.

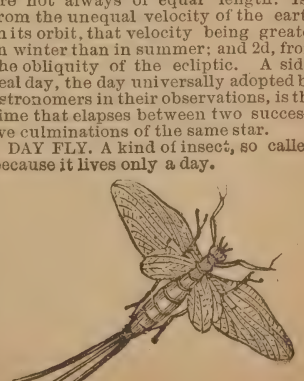
DATHOLITE. A vitreous mineral composed of silica, lime and boracic acid, not transparent, whence its name.

DATUM. A thing given in logical and mathematical premises: a proposition or truth granted or admitted. Datum-line, in civil engineering, is the base or horizontal line of a section, from which heights and depths are calculated.

DAVYNE. A yellowish transparent mineral ejected from Vesuvius; its constituents being silica, alumina, lime, iron, and water; sp. gr. 2·4.

DAY. An astronomical period, which depends upon the interval between two transits over the meridian of any point in the heavens, real or imaginary. But the only days distinguished by that name in astronomy are the sidereal day, the real solar day, and the mean solar day. The sidereal day is the interval between two transits of the same fixed star, which is divided into twenty-four sidereal hours. The real solar day is the interval between two moons or transits of the sun over the meridian. The mean solar day is the average of all the real solar days. The Babylonians commenced the day at sun-rising, the Jews at sun-setting, and the Egyptians at midnight, as do many modern nations; the British, French, Spanish, Americans, &c. In the computation of time, the civil or mean solar day is the time employed by the earth in revolving on its axis, 365·2425 of such revolutions constituting a mean Gregorian year: with most of the modern nations it commences at midnight, and consists of 24h. 3m. 56s., 55 of sidereal time. Solar days are not always of equal length: 1st, from the unequal velocity of the earth in its orbit, that velocity being greater in winter than in summer; and 2d, from the obliquity of the ecliptic. A sidereal day, the day universally adopted by astronomers in their observations, is the time that elapses between two successive culminations of the same star.

DAY FLY. A kind of insect, so called because it lives only a day.



DEAD-EYE. A sea term for a sort of flat block.

DEAD LANGUAGES. Those languages which have ceased to be spoken by any nation, as the Greek and Latin.

DEAD NETTLE. A sort of nettle without stings.

DEAD RECKONING. The account kept of a ship's course by the log, without any observation of the sun, moon, or stars.

DEAF AND DUMB. Those who have the misfortune to be born, without the faculties of hearing or speaking. Means have been successfully employed to supply these defects in charitable institutions, for the benefit of these unhappy objects, where the young are taught to communicate their thoughts by the help of signs, particularly by the language of the fingers, which, though before but a childish amusement, is now turned to a useful purpose. The first establishment of this kind in America was that at Hartford, which was founded chiefly through the instrumentality of Mr. Gallaudet.

DEAL. The wood of the fir tree cut up for building.

DEAN. In England, a dignified clergyman who is at the head of a chapter.

DEATHWATCH. A little insect inhabiting old wooden furniture, which makes a ticking noise in such a manner, by a certain number of distinct strokes, as formerly to be considered ominous to the family where it was heard. This circumstance gave rise to its vulgar name

DEBENTURE (in Law). A sort of bill drawn upon the Government. Custom House debentures entitle the bearer to receive a drawback on the exportation of goods, which were before imported.

DEBIT. A term used in book-keeping to express the left hand page of the ledger, to which all articles are carried that are charged to an account.

DEBT (in Commerce). A sum of money due from one person to another.

DEBT (in Law). An action which lieth where a man oweth another a certain sum of money.

DEC. An abbreviation for December.

DECADE The number or space of ten days, which formed the third part of the Attic month; also the number of ten books which was formerly the division of some volumes, as the Decades of Livy.

DECAGON. A plane geometrical figure consisting of ten sides and ten angles.

DECALOGUE. The Ten Commandments delivered by God from Mount Sinai to Moses.

DECAMERON. A volume of ten books, such as the Decameron or novels of Boccacio.

DECANDRIA. One of the artificial classes of Linnæus, comprehending those plants which have ten stamens in the flower.

DECANTER. A glass bottle made so as to hold the wine for immediate use.

DECEMBER. The last month in the year, when the sun enters the tropic of Capricorn, making the winter solstice.

DECEMVIRS. Extraordinary magistrates among the Romans, chosen for the particular purpose of collecting the laws of the twelve tables, which they gathered from the writings of Solon.

DECIDUOUS PLANTS. Plants which cast their leaves in winter.

DECIMAL. An epithet for what consists of the number of ten; as, Decimal Arithmetic, a mode of computation that proceeds on the scale of ten figures; Decimal Fractions, such as have 10, 100, 1000 &c. for their denominator, and marked with a point thus .5 for five-tenths.

DECIMATION. A military punishment among the Romans, inflicted on every tenth man of the company who had behaved themselves ill.

DECK. The floor of a ship. The decks may be either first, second, or third; where there are more than one, beginning from the lowest upwards.

DECLARATION (in Law) A statement of the cause of action by a plaintiff against a defendant.

DECLENSION. The different inflexions of nouns throughout their cases.

DECLINATION. The distance of any star or point of the heavens from the equator, either north or south. The great-

ast declination is 23 degrees and a half.

DECOCTION. A medicinal liquor.

DECOMPOSITION (in Chemistry). The reduction of a body to the parts of which it is composed.

DECORATIONS. Any ornaments or embellishments, such as prints to a book, or the mouldings, and other carved works in buildings.

DECOY. A sea term for a stratagem employed by ships of war, to draw any vessel of inferior force into an incautious pursuit, until she comes within gun-shot.

DECOY (among Sportsmen). A place for catching wild fowl.

DECOY-DUCK. A wild duck trained to decoy others into the decoy, or place where they may be caught.

DEED (in Law). A written contract, signed, sealed, and delivered. It is particularly applied to instruments for conveying land.

DEEP-SEA-LINE. A sea term for a small line to sound with.

DEER. An animal which in England is kept in parks, either for ornament or for the chase; the flesh of which is called venison. In North America, we have five animals of the deer kind, the Moose or Elk of Europe; the American Elk, a stately animal, whose branching horns are sometimes five feet in length; the common fallow, or Virginia deer; the mule, or black tailed deer of the Rocky mountains; and the Rein-deer. The male of the fallow deer, is called Buck, the female, Hind. The stag, Hart, or Red Deer of Europe, the female of which is called Hind, is not found in this country. It is a characteristic of all these animals, that they shed their horns once a year.

D. F. Defensor Fidei, Defender of the Faith.

DE FACTO. In deed or fact.

DEFALCATION. A falling off or a failure in any public accounts.

DEFAMATION (in Law). Slanderous words spoken or written against any one.

DEFAULT (in Law). A nonappearance in court without sufficient cause.

DEFAULTER. One who is deficient in his accounts.

DEFECTION. The falling off from a government or state.

DEFENCE (in Law). The reply which the defendant makes after the declaration is produced; in Military Affairs, any work that covers or defends the opposite posts, as flanks, parapets.

DEFENDANT (in Law). One who is sued in an action.

DEFENDER OF THE FAITH. A title given by Pope Leo X. to Henry VIII. for writing against Luther.

DEFILE. A narrow lane or passage through which a company of soldiers can pass only in file.

DEFINITION. The determining the nature of things by words, or explaining the signification of a word.

DEFLAGRATION. The burning in a crucible of any mineral body.

DEFLEXION. The turning of any thing out of its true course.

DEFLUXION (in Surgery). The falling of a humour in the body, from a superior upon an inferior part.

DEGRADATION (in Ecclesiastical Affairs in England). The depriving a person of his dignity and degree as the degradation of a clergyman, by depriving him of holy orders.

DEGRADATION (in Military Affairs) The depriving an officer of his commission

DEGREE (in Mathematics). The 360th part of the circumference of a circle marked thus (°).

DEGREE (in Law). An interval of relationship between persons, more or less nearly allied.

DEGREES (in a University). Titles of honour, conferred on persons for their merit in the arts and sciences.

DEINORNIS, also DINORNIS. A gigantic bird found in a sub-fossil state in New Zealand, having been a wingless bird of great size and strength—called the Moa by the natives.

DEINOSAURIANS. An order of fossil reptiles found in the Upper Secondary Formations, of great size, and fitted for terrestrial life.

DEINOTHERIUM. A gigantic fossil mammal furnished with a short proboscis, and armed with two enormous tusks, turned downwards, and slightly curved inwards.

DEIPNOSOPHIST. One of an ancient sect of philosophers, who were famous for their learned conversation at meals.

DELFT WARE. A kind of potter's ware, originally made at Delft in Holland; it is covered with an enamel, or white glazing, in imitation of porcelain.

DELIQUIUM, or DELIQUESCENCE. A spontaneous solution of some salts by exposure to the air.

DELIVERY, or GAOL DELIVERY (in Law). A term applied to the sessions at the Old Baily, &c. in London, by which the gaol is delivered or cleared of prisoners

DELIVERY (in the Mint). The quantity of moneys coined within a given period.

DELIVERY (in Oratory). The manner

of pronouncing an address, as regards the voice and utterance of the speaker.

DEMESNE LANDS. In England, lands which the lord of a manor has in his own hands.

DEMI. A half-fellow at Magdalen College at Oxford England; also a term in composition signifying half, as, demigod, a hero who was enrolled among the gods.

DEMOCRACY. A form of government where the supreme power is lodged in the people at large, or in persons chosen by them.

DEMONSTRATION. A proof or chain of arguments, serving to prove the truth.

DEMURRER (in Law). A pause or stop in a suit upon some difficulty.

DEMY. A sort of paper much used in printing.

DENIER. One of the earliest French coins, answering nearly to the English penny.

DENIZEN. An alien who is naturalized.

DENOMINATOR. That part of a fraction which stands below the line, as 10 in the fraction $\frac{5}{10}$.

DENOUEMENT. The developement of the plot in a play.

DE NOVO. Afresh, or from the beginning.

DENSITY. The property of bodies, of containing a certain quantity of matter under a certain bulk.

DENTIST. One who draws teeth, and prescribes for their diseases.

DEODAND. A thing as it were forfeited to God, to atone for the violent death of a man by misadventure.

DEPARTURE. The easting or westing of a ship, in respect to the meridian it departed from.

DEPHLEGMATION. The depriving any liquid of its superfluous water.

DEPONENT. One who gives information on oath before a magistrate.

DEPORTATION. The banishment of a person, among the Romans, to some distant island.

DEPOSITION. The testimony of a witness taken upon oath.

DEPOT. A place where military stores are deposited.

DEPRESSION. The distance of a star from the horizon below.

DEPRESSION OF THE POLE. Is said of a person sailing from the pole to the equator.

DEPRESSION OF THE VISIBLE HORIZON, or, Dip of the Horizon. Its dipping or sinking below the true horizontal plane, by the observer's eye being above the surface of the sea.

DEPRIVATION. In England, a taking away, as when a parson or vicar is deprived of his preferment.

DEPUTY. A person appointed by commission to act for another.

DERELICT. Forsaken, left; as derelict lands, lands which the sea has left; derelict ships, vessels left at sea, &c.

DERIVATIVE (in Grammar). Any word which is derived from another.

DERMESTES. An insect, called in vulgar language the Leather-eater.

DERNIER. Last, as a tribunal of dernier resort, the last or highest court of appeal.

DERVISE. An order of religious persons in Mahometan countries, who practise great austerities on themselves.

DESCENSION. An arc of the equator which descends or sets with any sign or point in the zodiac. Descension is either right or oblique, according as it takes place in a right or oblique sphere.

DESCENSIONAL DIFFERENCE. The difference between the right and oblique descension of a star, &c.

DESCENT. In general, the tendency of heavy bodies towards the earth.

DESCENT (in Law). Hereditary succession to an estate.

DESCENT (in Military Affairs). Landing in a country for the purpose of invasion.

DESCRIPTION. An imperfect kind of definition, that includes many accidents and circumstances peculiar to an object, without defining its nature precisely.

DESERTER. A soldier who runs away from his colours, or goes over to the enemy.

DESIDERATUM (in Literature). What is wanted or inquired after. A work is a desideratum, which, though wanted, is not executed.

DESIGN. The first draught, or sketch of any picture.

DESPOTISM. A form of government where the monarch rules by his sole and sovereign authority.

DESUNT CÆTERA. The rest wanting; words put at the end of any chasm or deficiency, in an imperfect or mutilated work.

DETACHMENT (in Military Affairs). A certain number of men selected for a particular expedition or service.

DETAINER. A writ for holding any one in custody

DETENTS. The stops in clock-work which, by being lifted up or let down lock or unlock the clock [illegible]king.

DETERGENTS. Medicines which remove viscid humours

DETERMINATE PROBLEM That which has one, or a limited number of answers

DETONATION The noise and explosion, which some substances make upon the application of fire to them, as gunpowder, &c.

DETONATING POWDER, or FULMINATING POWDER. A preparation of nitre, sulphur, &c.

DETRITUS. That which is washed down from the mountains, and forms a new soil.

DEUCALION. The son of Prometheus, who, with his wife Pyrrha, were saved during a deluge, in a ship on Mount Parnassus

DEVISE. A gift of lands by last will and testament.

DEUTERONOMY. The fourth book of Moses.

DEW. The moisture, which is first exhaled from the earth by the sun, and then falls again upon the earth in gentle drops during the night.

DEWLAP. The loose skin that hangs down under the throat of an ox, cow, &c.

DEXTER. The right, or on the right hand or side, as the dexter point; in Heraldry, the right-hand side of the escutcheon.

DEY. The supreme governor of Algiers.

DIABETES (in Medicine). An excessive discharge of crude urine.

DIACOUSTICS. The science of refracted sounds.

DIADELPHIA (in Botany). One of the Linnæan classes, comprehending such plants as bear hermaphrodite flowers with two sets of united stamens.

DIADEM A headband or fillet, anciently worn by kings as an emblem of dignity.

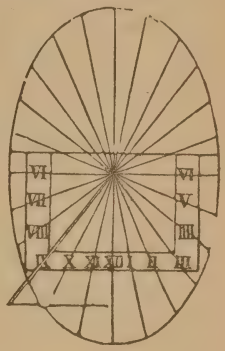
DIÆRESIS (in Grammar). The division of one syllable into two, marked thus (··).

DIAGNOSTIC SIGNS Signs by which diseases are distinguished from each other.

DIAGONAL. A straight line drawn from one angle of a figure to another

DIAGRAM. A scheme drawn by way of illustrating any thing.

DIAL A plate marked with lines, for showing the hour of the day by the shadow of a gnomon, style, or pin when the sun shines. The diversity of sun-dials arises from the different situation of the plane, and from the different figure of the surfaces upon which they are described. The subjoined figure represents an horizontal dial.




DIALECT. A manner of speech peculiar to any parts of a country. The dialects of Greece were admitted to form a part of their language, as the Attic dialect, spoken by the Athenians; so the Ionic, Poetic, Æolic, and Doric dialects.

DIALECTICS. The art of logic

DIALLING. The art of drawing dials on any surface.

DIALLIST One who constructs sundials

DIALOGUE. A written discourse between two or more persons.

DIALYSIS. A mark or character, consisting of two points placed over two vowels, as poëmata, to show that they must be sounded distinctly.

DIAMETER. A right line passing through the centre of a circle, or any curved figure.

DIALLAGE. A mineral of a brilliant green color, with a silky or pearly lustre. It consists of silica, alumina, lime, magnesia, oxide of chrome, and oxide of iron.

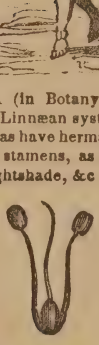
DIAMAGNETIC. A term applied by Farraday to a class of substances which, under the influence of magnetism, take a position, when freely suspended, at right angles to the magnetic meridian.

DIAMOND. The most valuable and the hardest of all precious stones or gems. It is pure carbon; and its primitive crystals are the regular octahedron, which reflects all the light falling on its posterior surface at an angle of incidence greater than 24° 13, whence its great brilliancy is derived. The diamond has various tints of color; sometimes of a yellowish, bluish, or rose-red tinge, though sometimes perfectly colorless. The largest diamond known is said to have belonged to the Emperor of Brazil; but the celebrated Koh-i-noor diamond, which passed from the hands of the Mogul princes to the possession of Queen Victoria, is among the most valuable in Europe. In geometry, diamond is the name of a quadrangular or rhomboidal figure.

DIAPHONIES. The doctrine of refracted sound.

DIANA. The goddess of hunting, the daughter of Jupiter and Latona, and twin sister of Apollo; she is commonly represented with a bow and arrow

DIANDRIA (in Botany). One of the classes in the Linnæan system, consisting of such plants as have hermaphrodite flowers with two stamens, as the olive, the privet, the nightshade, &c



DIAPASON (in Ancient Music). The interval of an octave; among Musical Instrument Makers, the diapason is a scale or measure.

DIAPER. A kind of linen for the table, wrought with flowers

DIAPHANOUS. Transparent like glass

DIAPHONIA. The precepts formerly taught for the use of the organ.

DIAPHORETICS. Medicines which promote perspiration

DIAPHRAGM. A muscular membrane which divides the thorax from the abdomen

DIARRHŒA A disorder which consists in the frequent discharge, by stool, of a bilious humour from the intestines.

DIARY. An account of what passes in the course of a day

DIATESSERON (in Music). An interval composed of a greater and less tone.

DIATESSERON (in Theology) The four Gospels.

DIATRIBE. A disputation or controversial discourse

DIBBLE. A pointed tool for making holes to plant in.

DICE. Pieces of bone or ivory, of a cubical form, and marked with dots on each of their faces from one to six.

DICTATOR. An extraordinary magistrate among the Romans, chosen upon particular occasions; and invested with absolute power. He laid down his office, as soon as the occasion ceased, for which he had been appointed

DICTIONARY. A collection of the words of a language, explained in alphabetical order.

DICTUM. The positive opinion pronounced by an individual.

DIDACTIVE. An epithet for what serves to teach or explain the nature of things, as didactic pieces.

DIDYNAMIA (in Botany). One of the Linnæan classes, including such plants as have flowers with four stamens in two pairs of different lengths.

DIE. The stamp used in coining.

DIE (in Architecture). The middle of the pedestal.

DIER One who follows the trade of dyeing.

DIER'S BROOM. A shrub so called from its flowers, which yield a colour used by diers in dyeing wool green.

DIES NON; that is, Dies non juridici. Days on which no pleas are held, in any court of justice.

DIET. Food regulated by the rules of medicine.

DIETETICS. That branch of the medical science, which treats of the diet or food suited to particular cases.

DIEU ET MON DROIT; that is, God and my right. The motto on the arms of the King of England.

DIFFERENCE (in Arithmetic) The

emainder, when one number has been subtracted from another.

DIFFERENCE (in Heraldry). What is added in coats of arms, as a mark to distinguish younger families from the elder.

DIFFERENCE OF LONGITUDE (in Astronomy). An arc of the equator, comprehended between the meridians of two places on the earth.

DIFFERENTIAL CALCULUS A method of finding a differential, or that infinitely small quantity, which taken an infinite number of times, is equal to a given quantity.

DIGESTER. An apparatus for reducing substances to a pulp or jelly.

DIGESTION. The dissolving or concocting food in the stomach so that its various parts may be applied to their proper uses.

DIGESTION (in Chemistry). The continual soaking of a solid substance in a liquid, so that by the application of heat, it may be reduced to a soft substance.

DIGESTION (in Surgery). The disposing a wound to suppurate or discharge good pus.

DIGESTIVES. Medicines which help digestion.

DIGESTS. The first volume of the civil law.

DIGIT. A measure equal to three quarters of an inch; also a character denoting a figure, as 1, for one; 2, for two, &c.

DIGIT (in Astronomy). The twelfth part of a diameter of the sun or moon.

DIGITALIS, or FOXGLOVE. A kind of plant which is for the most part herbaceous, with a root that is either biennial or perennial. The stalk of this plant rises two or three feet high, and bears spikes of iron coloured, or purple flowers. The purple foxglove is a native of England, and is much used in medicine.

DIGNITY (in Law). Honour and authority.

DIGYNIA (in Botany). An order in the Linnæan system, consisting of plants that have two pistils

DILAPIDATION (in Law). The ruin or damage which accrues to a house, in consequence of neglect.

DILEMMA. An argument which cannot be denied in any way, without involving the party denying in contradictions.

DILETTANTE. A lover of the fine arts.

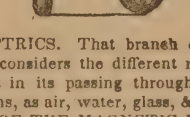
DIMENSION The measure or compass of a thing; a line has one dimension, namely, length; a surface two, namely, length and breadth; a solid three, namely, length, breadth, and thickness

DIMINUTIVE (in Grammar) A word or ending, which lessens the meaning of the original word; as, rivulet, a small river.

DIOCESAN. A bishop who has charge of a particular diocese.

DIOCESE. The district or circuit of a bishop's jurisdiction.

DIOECIA (in Botany). A class in the Linnæan system, comprehending such plants as have no hermaphrodite flowers, but the males and females on distinct individuals, as the poplar, aspen, amber tree, willow, ozier, &c.



DIOPTRICS. That branch of optics, which considers the different refractions of light in its passing through different mediums, as air, water, glass, &c.

DIP OF THE MAGNETIC NEEDLE. The property of the needle, when rubbed with the loadstone, of inclining the north end below the level of the horizon.

DIP OF THE HORIZON See DEPRESSION

DIPHTHONG. Two vowels sounded as one; as, æ.

DIPLOMA. A license or certificate given by colleges, &c. to a clergyman, to exercise the ministerial functions, or to a physician, to practice physic.

DIPLOMACY. The functions of an ambassador residing at a foreign court.

DIPPING NEEDLE. The magnetical needle so duly poised about an horizontal axis, that, besides its direction towards the pole, it will always point to a determined degree below the horizon. The dipping needle was invented by Robert Norman, a compass maker at Ratcliffe, about the year 1580, and arose, according to his own account of the matter, from the following circumstance. It was his custom to finish and hang the needles of his compasses before he touched them, and he always found, after the touch, the north point would dip or decline downward, pointing in a direction under the horizon; so that to balance the needle again, he was always forced to put a piece of wax on the south end, as a counterpoise After having observed this effect frequently, he was at length led to mark the quantity of the dip, or to measure the greatest angle which the dip would make with the horizon; he found at London it was 71° 50′, but by

subsequent experiments the dip is found to decrease about 1′ 4″ every year.

DIPTERA (in Entomology). An order in the Linnæan system, comprehending insects that have two wings, with a poiser, as the fly, the gnat, &c.

DIRECTION (in Astronomy). The motion and other phenomena of a planet when it is direct, or going forward in the zodiac according to the natural order of the signs.

DIRECTION, LINE OF (in Gunnery). The direct line in which a piece is pointed.

DIRECTION OF A LETTER. The superscription or address.

DIRECTION POST. A post set up in roads, to direct the traveller to particular places.

DIRECTION WORD, (in Printing). The word which begins the next page, which used to be set at the bottom of the page preceding.

DIRECTORY (in England). A form of prayer set forth by the assembly of divines, and used by order of the Long Parliament, instead of the Common Prayer. The word is applied in the United States to books in the large cities which point out the names and residences of the inhabitants.

DIRGE. A song of lamentation at funerals.

DIRK. A kind of dagger.

DISBANDED. An epithet used for a regiment discharged from service.

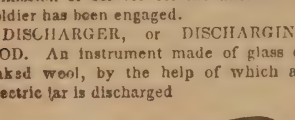
DISC. The body or face of the sun or moon as it appears to us

DISC (in Optics). The magnitude of a telescope glass, or the width of its aperture.

DISCHARGE (in Law) A release from confinement.

DISCHARGE (in Military Affairs). A remission of service for the time that a soldier has been engaged.

DISCHARGER, or DISCHARGING ROD. An instrument made of glass or baked wool, by the help of which an electric jar is discharged



DISCLAIMER (in Law) A plea containing an express denial.

DISCIPLINE. In general, a rule or method of government.

DISCIPLINE (in Military Affairs). The training up soldiers for service.

DISCORD. An inharmonious combination of sounds.

DISCOVERY (in Law). The disclosing or revealing any thing by a defendant, in his answer to a bill, filed against him in court of equity.

DISCOUNT (in Commerce). An allowance made on a bill, or any other debt not yet become due, in consideration of immediate payment.

DISEASE. That state of a living body which interrupts any of its functions.

DISEMBOGUING. A term applied to rivers, which discharge themselves into the sea.

DISJUNCTIVE. An epithet for conjunctions, which separate the sense, as but, nor, &c.

DISLOCATION. The putting a bone out of its place.

DISPATCHES. Letters sent to, or from government, on public business.

DISPENSARY. A charitable institution, where medicine and advice are given gratis to the poor.

DISPENSATION (in Law). In England, an exclusive privilege, to do any thing that is otherwise prohibited by law, granted by the King in council.

DISPENSATION (in Ecclesiastical Affairs). An indulgence granted by the Pope, to do what is otherwise forbidden by the church, as the marriage of first cousins, &c.

DISPENSATORY, or PHARMACOPŒI A book which directs apothecaries, in the compounding or making up medicines.

DISPERSION (in Optics). The divergency of the rays of light.

DISPOSITION (in Military Affairs). The placing an army ready for attack or defence.

DISPOSITION (in Architecture). The just placing all the several parts of a building.

DISSECTION. The cutting asunder animal bodies, in order to come at the knowledge of their parts.

DISSEISIN (in Law). The wrongful putting out of one that is seised of his freehold.

DISSENTER. One who dissents or departs from the forms of the Church, as established in England.

DISSIPATION (in Medicine). An insensible loss or consumption of the minute parts of a body.

DISSIPATION (in Optics) The Circle of Dissipation is that circular space upon the retina, which is taken up by the rays of each pencil in indistinct vision.

DISSOLVENT. A liquor proper for reducing a solid body to the state of a fluid

DISSOLUTION. The reducing of a solid body into a fluid state, by the action of some menstruum or dissolvent.

DISSONANCE (in Music). A disagreeable interval between two sounds, which being continued together, offends the ear.

DISTAFF. An instrument anciently used in spinning.

DISTEMPER (in Painting). Colours not mixed with oil or water, but with size, whites of eggs, &c.

DISTEMPER (in Farriery). A disease incident to dogs, horses, and other domestic animals.

DISTICH. A couplet or couple of verses in poetry, making complete sense.

DISTILLATION. A chemical process of drawing out the humid, spirituous, oleaginous, or saline parts of mixed bodies, by means of heat, these parts being first resolved into a gas or vapour, and then recondensed into a fluid, by means of cold.

DISTILLER. One who follows the trade of distilling. The distillers are one of the city companies in London, incorporated in the reign of Queen Elizabeth.

DISTRESS (in Law). The distraining or seizing upon a person's goods, for the payment of rent or taxes, &c.

DISTRIBUTION (in Printing). The taking a form asunder, so as to separate the letters.

DISTRIBUTION (in Medicine). The circulation of the chyle with the blood.

DISTRIBUTION (in Logic). The distinguishing a whole, into its several constituent parts.

DISTRIBUTIVE JUSTICE. Justice administered by a judge, so as to give every man his due.

DISTRIBUTIVE NOUNS. Words which serve to distribute things into their several orders, as each, either, every, &c.

DISTRICT (in Law). That circuit or territory, within which a man may be forced to make his appearance.

DITCH. A trench cut in the ground about a field.

DITCHER. A labourer who makes ditches.

DITHYRAMBIC. A sort of hymn anciently sung in honour of Bacchus; any poem written with wildness.

DITTO, abbreviated Do. The same as the aforesaid; a term used in accounts.

DIVAN. A council of state among the Turks; also a court of justice.

DIVER. A waterfowl that frequents lakes, and goes with difficulty on land.

DIVERGENT, or DIVERGING An epithet for several things which have the property of divergency.

DIVERGING RAYS (in Optics). Those which, issuing from a radiant point, continually recede from each other.

DIVERGING SERIES (in Mathematics). A series, the terms of which always become larger, the farther they are continued.

DIVIDEND (in Arithmetic). The number to be divided.

DIVIDEND (in Commerce). The share of profit in a joint stock, which is to be divided among the shareholders; also that part of a debtor's effects, which is to be divided among the creditors.

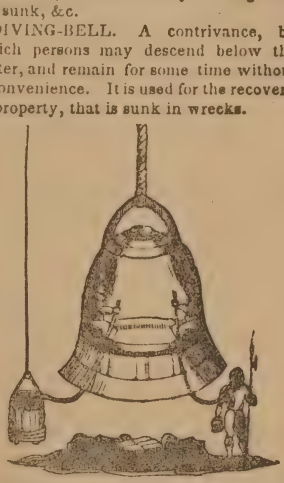
DIVINATION. A practice among the heathens of foretelling future events, by the flight of birds or other signs.

DIVINE. A minister of the gospel; a clergyman.

DIVINER. One who professes the art of divination; a conjuror.

DIVING. The art of descending under water to a considerable depth, and remaining there for a length of time, as occasion may require. The practice of diving is resorted to, for the recovery of things that are sunk, &c.

DIVING-BELL. A contrivance, by which persons may descend below the water, and remain for some time without inconvenience. It is used for the recovery of property, that is sunk in wrecks.



DIVISION. One of the four first rules or operations in arithmetic, by which we find how often one quantity is contained in another. There are three numbers contained in this operation, namely, the dividend, or number to be divided; the divisor, or that by which one divides; and the quotient, or that number which shows, how often the second is contained in the first

DIVISION (in Military Affairs) A body of men commanded by a particular officer.

DIVISION (in Music). That part into which an octave is divided, as quavers, &c.

DIVISION (in Printing). A mark to divide compound words, as (-) in May-pole.

DIVORCE (in Law). A lawful separation of man and wife, pronounced by a competent judge, on cognizance had of the cause.

DIURETICS. Medicines which promote the urinary discharge

D. M. Doctor Medicinæ, Doctor of Medicine.

DOCK (in Shipbuilding). A trench near a harbour, fitted for the building and repairing of ships

DOCK (in Botany). A plant which grows wild, and infects corn fields; some species of it have medicinal virtues.

DOCK (in Farriery). The stump of a horse's tail.

DOCKET (in Commerce). A bill with a direction tied to goods.

DOCKET (in Law). A small piece of paper or parchment, containing the heads of a large writing; also a subscription at the foot of letters patent. 'To strike a docket,' is the same, as to make a man a bankrupt by process of law.

DOCKING. Cutting off a horse's tail to the stump.

DOCTOR. Literally, a teacher; the highest degree in any faculty in a university, as D. D. Doctor of Divinity, M. D. Doctor of Medicine, D. Mus. Doctor of Music, LL. D. Doctor of Laws.

DOCTOR'S COMMONS. In England, a college of civilians

DODECAHEDRON (in Geometry). A solid bounded by twelve equal and equilateral pentagons.

DODECANDRIA. One of the Linnæan classes, comprehending those plants which have flowers with twelve stamens and upwards, as far as nineteen inclusive, as dyer's weed, purslane, houseleek, &c.

DODO; the Monk Swan. A species of large birds now extinct. At the discovery of the island of Mauritius, in 1598, the Dodo was very abundant there.

DOG. A domestic, faithful and valuable animal, of which the most remarkable varieties are the mastiff, bulldog, hound, greyhound, spaniel, terrier, pointer, &c The Monks of St. Bernard on the Alps, have a peculiarly sagacious breed of the spaniel, one of which saved the life of a boy, whose mother was frozen to death in the snow

DOG-DAYS. Certain days in the month of July and August, which are usually very hot, owing, as is supposed, to the influence of the Dogstar, which then rises and sets with the sun.

DOGE. The chief magistrate in the republics of Venice and Genoa.

DOGFISH. A fish of the shark kind.

DOGGREL. An irregular kind of versification.

DOGMATIC SECT. An ancient sect of physicians, of which Hippocrates and Galen were at the head. They supposed principles, and from them drew inferences applicable to particular cases; they were opposed to the empirici, or theorists, answering to the quacks of modern days.

DOGSTAR, or SIRIUS. A star of the greatest magnitude in the constellation canis.

DOLLAR. A silver coin of the United States, and also of several other countries, having an average value of 100 cents. The U. S. silver dollar contains 371¼ grains of pure silver.

DOLPHIN. An animal which, though commonly reckoned among the fishes, is classed by Linnæus under the mammalia. It has an oblong body, and swims with great rapidity.

DOME. A vaulted roof or tower of a church.

DOMESDAY BOOK An ancient re

ord, made in the reign of William the Conqueror; or a book of the survey of England, containing an account of all the demesnes of the crown.

DOMINICAL LETTER. One of the first seven letters in the alphabet, with which the Sundays throughout the whole year are marked in the Almanac. After the term of twenty-eight years, the same letters return in the same order again.

DOMINO. A game played by two or four persons, with twenty-eight pieces of ivory, called cards.

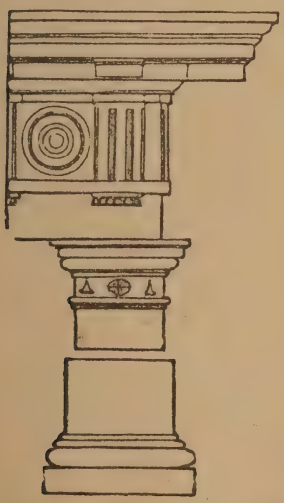
DOMINO (in Ecclesiastical Affairs). A sort of hood worn by canons of a cathedral.

DON. A title of honour in Spain, answering to Dom, or Dominus, Lord.

DONATIVE (in Law). A benefice given to a clerk by the patron, without presentation to the bishop.

DONJON (in Fortification). A tower or redoubt, where the fortress may retreat in case of necessity.

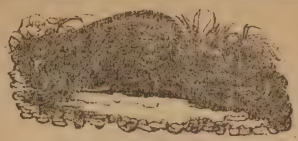
DORIC ORDER (in Architecture). The most ancient of the Grecian orders, made, as is said, in imitation of the hovels erected by the original inhabitants of Greece



DORMER, or DORMENT (in Architecture). A window made in the roof of a building.

DORSAL. An epithet for what belongs or relates to the back, as the dorsal fins of the fishes

DORMOUSE. An animal of the mouse kind, which remains torpid during winter



DOSE. The quantity of any medicine prescribed by the physician to be taken by the patient at one time

DOUAY BIBLE. An English translation of the Scriptures sanctioned by the Roman Catholic Church, and so called from Douay, a town in France.

DOUBLOON. A Spanish and South American gold coin, which weighs 417·70 grains troy, of which 365·49 are pure; value, $16.00. There are also half and quarter doubloons, of proportionate value.

DOUCHE. The name given to a jet or sudden rush of water directed on some diseased part of the body, with a view to strengthen it.

DOUCINE. In architecture, an ornamental moulding, concave above and convex below, being the French term for the cyma.

DOUCEUR. A gift made to gain the favour or interest of a person.

DOVE. A wild pigeon, of which there are three sorts, namely, the ring dove, the largest of the pigeon tribe, so wild that it cannot be domesticated; the stock dove, that is migratory; and the turtle dove, a shy and retired bird living in the woods. These descriptions apply to the European varieties. In America we have several kinds of pigeon, of which the passenger pigeon is the most remarkable. In the western states these birds assemble in such countless numbers, as to darken the air by their flocks, and desolate the whole country for miles around their breeding places The turtle dove of America differs in some measure, from the turtle dove of Europe

DOVE-TAILING. A method of joining one board into another, by pins in the one fitted to holes in the other.

DOWAGER (in Law). Properly, a widow who enjoys a dower, commonly applied as a title to the widows of princes and nobility.

DOWER (in Law). The portion which a widow has of her husband's lands at his decease

DOWLAS. A sort of linen cloth.

DOWN. The finest and softest part of the feathers of a goose or other water fowl

DOWNS. A bank of sand formed by the sea along its shores; also a large open plain

DR. An abbreviation for debtor and doctor

DRACHM. The eighth part of an ounce.

DRACO. A constellation in the northern hemisphere.

DRACO VOLANS. A meteor in the form of a flying dragon, sometimes visible in marshy countries.

DRAFT (in Commerce). A bill drawn by one person upon another for a sum of money.

DRAG. A sort of hook to catch hold of things under water.

DRAGOMAN. An interpreter in the Eastern countries, whose office it is to interpret for the European ambassadors at the Ottoman court.

DRAGON. See FLYING DRAGON.

DRAGON FLY. A particularly ravenous insect, which hovers over stagnant waters.

DRAGON'S BLOOD. A gum or resin of a tree in the Canaries and New Spain, formerly called Draco Arbor, now Astragalus; it is hard, compact, moderately heavy, and of a dusky red colour, but of a bright scarlet when powdered.

DRAGON'S HEAD. One of the nodes of the planets, particularly the moon, as distinguished from the dragon's tail. The former, marked thus (☊), is the northward point, as she ascends the south to the north; the latter is the southward point, marked (☋).

DRAGOON. A soldier who fights sometimes on foot and sometimes on horseback.

DRAGS. Floating pieces of timber, joined so that they may carry a load down a river.

DRAIN. A watercourse sunk in the ground for the purpose of carrying off the water.

DRAINING, or LAND DRAINING. The process of carrying water off from the land, sometimes by means of open drains, but more commonly by drains made to a certain depth under the ground, which are filled with bushes so as to admit the water.

DRAM. See DRACHM.

DRAMA. A play, or any piece fitted for theatrical representation. Dramas are either tragedies, comedies, operas, or farces.

DRAMATIS PERSONÆ. The performers and characters in any particular piece

DRAPER. A seller of cloth; as a woollen draper and a linen draper. The Drapers in London, are one of the city companies, incorporated in the reign of Henry VI.

DRAUGHT, or DRAFT (in Architecture). The figure of an intended building described on paper.

DRAUGHT (in Navigation). The quantity of water which a ship draws when she is afloat.

DRAUGHT (in Military Affairs). A detachment of soldiers drawn off from the main army.

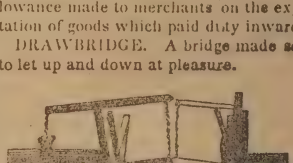
DRAUGHT (in Husbandry). What pertains to drawing, as draught horses.

DRAUGHTS. A game played with pieces on a checkered board, like a chess board, where by particular movements they are enabled to take each other, according to certain rules.

DRAUGHTSMAN. One who follows the profession of taking plans and sketches, of buildings and places.

DRAWBACK (in Commerce). An allowance made to merchants on the exportation of goods which paid duty inwards.

DRAWBRIDGE. A bridge made so as to let up and down at pleasure.



DRAWER A box in a case, from which it may be drawn.

DRAWER OF A BILL. One who writes and signs a bill for a sum of money to be paid to another.

DRAWING. The art of representing objects on paper, canvass, &c. by means of a pencil or a pen; also the representations so made, as drawings in India ink, pencil drawings, &c.

DRAWINGROOM. The room in which company assemble at court; or to which, in common cases, parties withdraw after dinner; also the company assembled at court, in Europe, to pay their respects to the sovereign.

DRAW-WELL. A deep well, in which water is drawn up by means of a wheel, rope, and a bucket.

DRAY. A brewer's cart.

DRAYMAN. The driver of a dray.

DREAM. The acting of the imagination in sleep, which represents objects without the help of the senses.

DREDGE. A kind of net for catching oysters

DREDGING. The process of catching

oysters, by the removing or dragging the mud with dredges, &c.

DRESS Clothing for the body.

DRESS (in Husbandry). Any stuff, such as loam, sand, &c. which is put on land to improve the soil.

DRESSER. One employed in putting on the clothes of another, particularly for the purposes of ornament.

DRESSER (in Military Affairs). One who dresses a line of soldiers, or makes them stand with an even front.

DRESSER (in Housewifery). A bench on which meat is dressed or prepared for the cook.

DRESSING (in Husbandry). The cleaning of hemp, flax, &c. so as to prepare it for spinning.

DRESSING (among Letterfounders). The scraping, bearding, &c. of letters, before they are used by the printer.

DRESSING (in the Manege). The cleaning and trimming a horse.

DRIFT. A sea term for any thing that floats upon the water; also the course which a ship makes when she is driven by a storm.

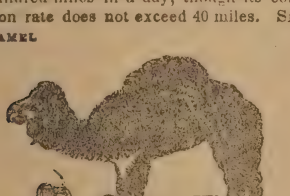
DRILLING (in Military Affairs) The teaching young recruits the first principles of military movements.

DRILLING (in Husbandry). A modern mode of putting seed into the ground by a machine called a drilling machine, which makes channels in the ground, and lets the seed into them, so that it comes up in rows at regular distances from each other.

DRINK. A liquid medicine given to a horse.

DRIP. The projecting part of a cornice.

DROMEDARY. The Arabian camel having one bunch, which is said to be very swift, and able to travel more than one hundred miles in a day, though its common rate does not exceed 40 miles. See Camel



DROP. An ornament in pillars of the Doric order.

DROPSY. A collection of watery humour either throughout the whole body, or in some part of it, as the cavity of the abdomen.

DRONE. A large kind of bee or wasp, which is without a sting. It is the male of this tribe of insects.

DROVERS. Men employed to drive cattle to, or from market.

DRUGGET. A kind of woollen stuff.

DRUGGIST. A dealer in drugs.

DRUGS. All kinds of simples, which are for the most part dry, and fit for medicinal uses.

DRUIDS. A sort of priests among the ancient Gauls and Britons.

DRUM. A musical instrument much used in the army, consisting of vellum strained over a wooden cylinder on each end, and beaten with sticks.

DRUM (in Anatomy). A membrane of the cavity of the ear

DRUMMER (in Military Affairs). A soldier who beats the drum.

DRUM MAJOR. He who has the command over the other drummers

DRUPE (in Botany). A pulpy fruit, containing a nut or stone, with a kernel like the plum.

DRYADS. Nymphs inhabiting woods.

DUALISM. The doctrine of Manichæism, or the belief in two eternal principles, the one good and the other evil, to which all the phenomena of nature are attributed.

DUCAL CORONET. A circle of gold with eight strawberry or parsley leaves of equal height, about the rim.

DUCATOON A silver coin in Holland, worth about $1.25.

DUCK. A water fowl, both wild and tame.

DUCK, or RUSSIA DUCK (in Commerce). The best sort of canvass.

DUCKWEED. A plant growing in ditches and stagnant waters; it is an annual much liked by ducks.

DUCT. A channel or passage for any fluid in the body.

DUCTILITY. A property possessed by certain bodies, particularly metals, of yielding to any pressure, by which their parts may be expanded by hammering.

DUEL (in Law). Originally a combat between two persons for the trial of the truth; but now an unlawful battle between two persons on some private quarrel, in the which, in England, if death ensue, both the principal, and the seconds are guilty of murder. In most of the United States, the laws are similar.

DUES (in Law). Moneys due to the clergy, as Easter offerings, &c.

DUET. A little song in two parts.

DUKE. A sovereign prince in Germany; the highest title of honour in England next to the Prince of Wales.

DUMOSÆ. One of Linnæus's natural orders of plants, consisting of shrubs and bushes, as laurels, firs, &c

DUNGEON. The darkest, and closest part of a prison.

DUODECIMALS, or CROSS MULTIPLICATION. A rule used by workmen and artificers, in computing the contents of their work. Dimensions are usually taken in feet, inches, and parts.

DUODENARY ARITHMETIC. That in which the local value of the figures increases in a twelvefold proportion.

DUPLICATE. Any manuscript copied after another.

DUPLICATE RATIO (in Geometry) The product of a ratio multiplied into itself.

DURA MATER. One of the membranes which encloses the brain.

DURANTE (in Law). During, as Durante bene placito, during pleasure; Durante minore ætate, during minority.

DURESS. An unlawful imprisonment.

DUTCHY. In England, a seignory or lordship, formerly established by the king, with several privileges, honours, &c.

DUTY. What is paid or due, by way of custom on merchandise in general.

DWARF. A man much below the ordinary size.

DWARF (in Botany) A term for plants that grow low, as distinguished from those of the same kind which rise to a considerable height.

DYKE. A bank, mole, or causeway raised to stop the floods.

DYNAMICS. The science of moving powers, particularly of the motion of bodies mutually acting on one another. It is a branch of the science of mechanics, and is distinguished from statics in this, that the former considers bodies only as regards their motion, but the latter considers those bodies when in a state of rest, as to their equilibrium. When fluids, instead of solids, are the subjects of investigation, that which treats of their equilibrium, weight, pressure, &c. is called hydrostatics, and that which treats of their motion, hydrodynamics.

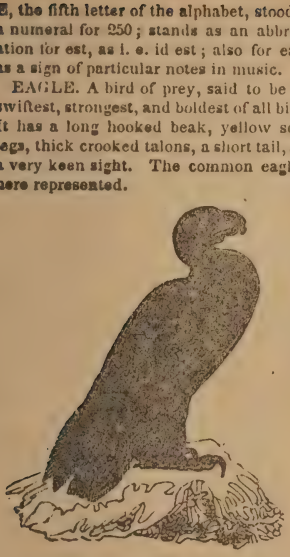
DYNASTY A series of princes who have reigned successively in any kingdom, particularly applied to the Egyptian kings.

DYSENTERY. A difficulty, or disturbance in the intestines, which impedes their functions

## E.

E, the fifth letter of the alphabet, stood as a numeral for 250; stands as an abbreviation for est, as i. e. id est; also for east; as a sign of particular notes in music.

EAGLE. A bird of prey, said to be the swiftest, strongest, and boldest of all birds. It has a long hooked beak, yellow scaly legs, thick crooked talons, a short tail, and a very keen sight. The common eagle is here represented.



The eagle, as a bearing in coat armour, is reckoned as honorable among the birds, as the lion is among the beasts. The bald eagle is the national emblem of the United States.

EAR. The organ of hearing in an animal body, which consists of the external ear, or all that lies without the external orifice of the meatus auditorius, and the internal ear, or that which lies within the cavity of the os temporis.

EARL. In England, a title of nobility, between a marquis and a viscount, now the third degree of rank.

EARL'S CORONET. Has no flowers raised above the circle, like that of a duke

and a marquis, but only points rising and a pearl on each of them.

EARL MARSHALL (in Eng.) Who has the care and direction of funeral solemnities. This office belongs by hereditary right to the Duke of Norfolk.

EARNEST (in Commerce). Money advanced to bind the parties to the performance of a verbal bargain.

EAR-RING. An ornament hung on the ears, particularly of women.

EARTH (in Mineralogy). A substance formerly considered as one of the four elements of which the material world is composed. The term is now applied to such substances as have neither taste nor smell, that are incombustible, and nearly insoluble in water, the specific gravity being under five, as lime, barytes, silica, clay, &c.

EARTH (in Astronomy). One of the primary planets, marked by the character ⊕. According to the Ptolemaic system it was supposed to be immoveable in the centre of the universe, but according to that of Copernicus, it moves from west to east so as to occasion the succession of day and night, and also annually round the sun, so as to cause the different seasons.

EARTH NUTS. A kind of plant, the pods or nuts of which ripen under ground The nuts yield a quantity of oil.

EARTHQUAKE. A violent shock or concussion of the earth, or some parts of it, caused by an accumulation of electrical matter within the bowels of the earth which forces a passage, and cause much destruction of houses, cities, trees, and whole tracts of country. In hot countries, earthquakes are most frequent.

EARTHWORM. A worm bred under ground, being the common species of the worm.

EARWIG. An insect with sheath wings, which was formerly imagined to creep into the ear, but this idea does not appear to be borne out by the fact, no case of the kind having yet been witnessed or recorded.

EASEL. A frame on which a painter sets the cloth, &c. to be painted.

EAST. One of the four cardinal points, where the sun rises.

EASTER. A solemn festival observed among Christians, in commemoration of the resurrection of our blessed Lord and Saviour Jesus Christ. This feast was fixed by the council of Nice in the year 325, to

be held on the Sunday which falls upon, or immediately after the full moon, which happens next after the twenty-first of March.

EASTER OFFERINGS. In England, money paid at Easter to the parson of the parish

EASTERLING. A money coined by Richard II, which is supposed to have ven rise to the name of sterling, as applied o English money.

EAU DE LUCE. A fragrant liquor, made chiefly of mastic dissolved in alcohol.

EAVES. The edges of the roof of a house, which overhang the wall, for the purpose of throwing off the water.

EAVESDROPPER. One who stands under the eaves of houses, for the purpose of listening to what passes within. Any one who listens slily to what is said by others.

EBB. The retirement or going away of the tide.

EBONY. A sort of black wood, which admits of a fine polish It is the wood of the eben tree, which grows in India, Ethiopia, and the Levant.

EBULLITION. The effervescence which arises from the mixture of an acid and alkaline liquor.

ECCE HOMO. A painting which represents our Saviour in a purple robe, and with a crown of thorns on his head.

ECCENTRIC CIRCLES Circles not having the same centre.

ECCENTRIC CIRCLE, or ECCENTRIC (in Modern Astronomy). The circle that circumscribes the elliptical orbit of the planet.

ECCENTRICITY (in Modern Astronomy). Is the distance between the sun and the centre of the eccentric.

ECCLESIASTIC. A clergyman; one dedicated to the ministerial office.

ECHO. A sound reflected, or reverberated from some body, and thence returned or repeated to the ear. Echoing bodies may be so contrived, as to repeat the echo several times. At Milan there is said to be an echo, which reiterates the report of a pistol fifty-six times, and if the report be exceedingly loud, the reiteration will exceed that number. The celebrated echo at Woodstock, in Oxfordshire, England, repeats the same sound fifty times. But the most singular echo hitherto spoken of, is that near Rosneath, a few miles from Glasgow, Scotland. If a person placed at a proper distance from this echo, plays eight or ten notes of a tune with a trumpet, they are correctly repeated by the echo, but a third lower; after a short pause, another repetition is heard, in a lower tone; and then, after another interval, third repetition follows in a still lower tone

ECHO (in Architecture). Any vault arch, constructed so as to produce an artificial echo. These are generally of a parabolic or elliptic form: of this kind is the whispering gallery in St. Paul's Cathedral, London, and some other large buildings. The vault of the Pantheon, Paris, is constructed on similar principles.

ECHO (in Poetry). A sort of verse which returns the sound of the last syllable.

ECHOMETER. A kind of scale or rule to measure the duration of sounds.

ECLECTICS. Ancient philosophers, who adhered to no sect, but selected what was best and most rational.

ECLIPSE. An obscuration of the sun, moon, or any heavenly body. An eclipse may be either partial, when only part of the body is darkened, or it may be a total eclipse, when the whole is darkened. A lunar eclipse is the depriving the moon of the sun's light, by the interposition of the earth between the sun and the moon. A solar eclipse is the privation of light which the sun suffers in regard to us, by the interposition of the moon between the sun and the earth.

ECLIPTIC. A great circle of the sphere, in which the sun performs his apparent annual motion. It is supposed to be drawn through the middle of the zodiac, and makes an angle with the equinoctial of nearly 23° 30′, which is called the obliquity of the ecliptic.

ECLOGUE. A pastoral poem, wherein shepherds are introduced discoursing together. It is so called after the Eclogues of Virgil.

ECONOMY. In the general sense, the regulation of things, or the due distribution of means to an end. Political economy is a science which treats of the wealth and resources of a nation, and the manner in which they may be best employed to increase the prosperity of the people. Adam Smith has treated at large on this subject in his Wealth of Nations.

E CONTRA. On the contrary.

ECTHLIPSIS. The cutting off a vowel or consonant.

EDGE. The sharp cutting part of an instrument.

EDGE TOOL. A tool made sharp for cutting.

EDIBLE ROOTS. Roots that are fit for food, as the potatoe, carrot, &c.

EDICT. A public ordinance or decree issued by a prince.

EDITION. The whole number of books of a kind struck off at one time

EDULCORATION (in Chymistry). The washing of things that have been calcined, in order to purify them from their salts.

EDULCORATION (in Pharmacy). The sweetening any medicinal preparation.

EEL. A voracious slimy fish, very similar to a lizard, that lurks and feeds in mud.

EEL POUT. A young eel.

EEL SPEAR. A forked instrument with which eels are caught.

EFFECTIVE (in Military Affairs). A term for any body of men that are fit for service.

EFFECTS. The moveables or goods of any merchant, tradesman, &c.

EFFERVESCENCE (in Chemistry). A violent commotion in the parts of any liquor, accompanied with some degree of heat.

EFFICIENT CAUSE. Any cause that actually produces an effect.

EFFIGY. Any representation whatever which gives, or is intended to give, the figure of a person; thus, the figure of a man dressed up and carried about in derision of any one, is called his effigy; when this is burnt, the person is said to be burnt in effigy.

EFFLORESCENCE (in Botany) The flowering of plants.

EFFLORESCENCE (in Chemistry). The conversion of any body into a dry powder.

EFFLUVIA. Small particles, perpetually flowing out of mixed bodies in the form of vapours, which are sometimes visible, as in the case of smoke or steam; and sometimes not perceptible, as insensible perspiration.

EFFUSION. The pouring out a liquor, so that the sediment may remain.

EFFUSION (in Surgery). The natural secretion of fluids from the vessels.

EFT A sort of lizard, which has a body covered with scales.

E. G. An abbreviation for Exempli gratia, that is, for example, or by way of example.

EGG. The fœtus or production of feathered fowls; that which they lay, and from which they hatch their young; also the spawn or sperm of other creatures. The eggs of birds are composed of the shell, or external coating, a thin, white, and strong membrane, the albumen or white, and the yolk.

EGLANTINE. The wild rose

EGRET. A bird of the heron tribe.

EIDER-DUCK. A kind of duck remarkable for the softness of its down

EIDOURANION. An exhibition of the heavens and the heavenly bodies.

EJECTMENT. A writ or action which lies for the lessee for a term of years, who is cast out before his term is expired; also the putting any one out of an estate by a legal process.

ELASTICITY. That property of bodies, of restoring themselves to their former figure after any external pressure. Elasticity is increased by augmenting the density of bodies; thus metals are rendered more elastic by being beaten by a hammer: it is also sometimes increased by cold; thus the strings of a violin recover their situation with less force in hot, than in cold weather.

ELECTION (in Law) The choice of two remedies, either of which, when chosen, the party is compelled to abide.

ELECTION The choosing of persons to a particular office or situation by a majority of voices, as in England the election of parish officers, or the election of members of parliament, which takes place every seven years. The state elections here are generally annual. The President, and Vice President are elected once in four years

ELECTIVE ATTRACTION Another name for chemical affinities.

ELECTOR (in Political Affairs). The title of such German princes as formerly had a voice in the election of the emperor of Germany.

ELECTOR (in English Law). Any one who has the right of giving his voice at an election, particularly at an election of a member of parliament. The term is applied in America to voters generally. In most of the states, those citizens who pay taxes are electors.

ELATERITE. A mineral pitch, a massive variety of bitumen; also called elastic bitumen.

ELATERIUM. The Squirting Cucumber, of the order Cucurbitaceæ. Extract of elaterium is gathered from this plant before it ripens, the juice being gently expressed, when a green sediment is deposited, which is collected and dried; one-eighth of a grain operates as a drastic purge.

ELATROMETER. In physics, an instrument for measuring the degree of diversity or rarefaction of air contained in the receiver of an air-pump.

ELECTRIC, or ELECTRICAL. Containing electricity, or capable of exhibiting it when excited by friction; derived from or produced by electricity; communicating a shock like electricity. Electric aura is a current of electrified air, employed as a mild stimulant in electrifying sensitive parts, as the ear or the eye. Electric circuit, or Electric current, is the transmission of electricity from a body overcharged to one that is undercharged, through the agency of metallic wires or conductors. Electric column is a sort of electric pile invented by De Luc, composed of thin plates of different metals, with paper interposed between them. Electric telegraph is a mode of transmitting messages and intelligence by means of electricity over wires, either for long or short distances. Electric wire is the popular name for the wires of the magnetic telegraph.

ELECTRICITY. The subtile agent called the electric fluid, usually excited by friction; the science which unfolds the phenomena and laws of the electric fluid. It was so called from the Greek word for amber, because it was in the friction of this substance that it was first observed. The phenomena of electricity are such as attraction and repulsion, heat and light, shocks of the animal system, and mechanical violence.

ELECTRO. A term extensively used as a prefix in the composition of words appertaining to electricity; as Electro-biology, the science of electrical forces as shown in mesmerism. Electro-chemistry, that portion of electric science which treats of the agency of electricity and galvanism in effecting chemical changes. Electro-chemical, that which pertains to electro-chemistry. Electro-dynamics, the phenomena of electricity in motion. Electro-gilding, a mode of gilding copper or silver by the agency of voltaic electricity. Electro-magnetic, designating what pertains to magnetism, as connected with electricity, or affected by it. Electro-magnetic Telegraph, an apparatus for conveying intelligence, by means of electricity moving between two places on iron wires. Electro-magnetism, that science which treats of the agency of electricity and galvanism in communicating magnetic properties. Electro-metallurgy, the art of depositing metals held in solution, as silver, gold, &c., on prepared surfaces, through the agency of voltaic electricity or galvanism. See Electrotype. Electro-motion, the motion of electricity or galvanism, or the passing of it from one metal to another. Electro-motive, producing electro-motion. Electro-negative, a term denoting the natural state of a body, or a particle of matter, which makes it tend to the positive pole of a voltaic battery. Electro-polar, a term applied to conductors, one end or surface of which is positive and the other negative. Electro-positive, a term denoting the natural state of a body, or a particle of matter, which makes it tend to the negative pole of a voltaic battery. Electro-telegraphic, belonging to the electro-magnetic telegraph, or by its means.

ELECTRODE. A name applied to what is called the pole of the voltaic circle. The electrodes are the surfaces, air, water, metal, &c., which serve to convey an electric current into and from the liquid to be decomposed.

ELECTROLYSIS. The act of decomposing a compound substance by the action of electricity or galvanism.

ELECTROLYTE. A compound which may be directly decomposed by an electric current.

ELECTROLYZE. To decompose a compound substance by the direct action of electricity or galvanism.

ELECTROMETER. An instrument for measuring the quantity or intensity of electricity, or for indicating the presence of electricity; an instrument for discharging electricity from a jar.

ELECTRON. Amber; also a mixture of gold with a fifth part of silver.

ELECTRO-PLATE. A precipitation of silver or gold on a surface of copper, or German silver metal.

ELECTROSCOPE. An instrument for rendering electrical excitation apparent by its effects.

ELECTRO-TINT. The art or process by which an etching is produced through the means of galvanism. The plate used for the purpose is of mixed metal, presenting a white surface, such as German silver. The artist sketches his design on the dull white surface by means of brushes and composition. All the parts which are white in the impression are left uncovered by the paint. When the picture is finished, it is coated with black-lead, and exposed to the electro-coppering process, by which a plate is produced for working in the copper-plate press, having the lines of the device marked in intaglio, or sunken.

ELECTROTYPE. The art of depositing metals held in solution, and of executing fac-simile representations by galvanism, sometimes called Electro-metallurgy. Electro-plating, which is effected on this principle, is a process by which a pattern, cast in alloy or white metal, composed of copper, nickel, and zinc—hard white, and fusible only at a high temperature — after being properly chased and prepared, and dipped in a vessel containing a solution of phosphorous, is transferred to a tank or trough, and subjected to galvanic agency. In the tank is a chemical solution of silver; and the wires of a galvanic battery are so arranged that the current, in completing its circuit, must necessarily pass through the solution. The result is, the solution is decomposed, and a fine film of metallic silver is deposited on the surfaces of the articles suspended in the trough.

ELECTRO-BALLISTIC APPARATUS. An instrument for determining by electricity the velocity of a projectile at any part of its flight.

ELECTRO-BIOLOGY. A term applied to ascertain mental phenomena, supposed by some to be produced by the various applications of mesmerism to the human body.

ELECTRO CALICO-PRINTING. The art of producing patterns on cloth by the chemical action of the voltaic current. The process may be thus described: if, for instance, a blue pattern is to be printed on a white ground, the cloth having been wetted with a very dilute hydro-chloric acid, is placed on a sheet of tin-foil or other conducting surface connected with the negative electrode of a voltaic battery. A plate of iron upon which the required pattern has been painted in varnish, is now connected with the positive electrode of the apparatus, and applied to the cloth. Electro-chemical action is at once set up, and the exposed portions of the metallic surface are dissolved by the acid, and the chloride of iron thus formed becomes fixed in the cloth. To develop the pattern, the cloth is now passed through a bath of prussiate of potash, which produces a beautiful blue color wherever the iron has touched, but which does not affect the parts which the varnish has shielded.

ELECTRICITY, HISTORY OF. It does not appear that the ancients had anything more than an imperfect and partial knowledge of the electric fluid. Thales, the Milesian, who lived about six hundred years before Christ, was aware of the electrical property of amber, that when rubbed it would attract light bodies to itself; and Theophrastus observed that lyncurium or tourmalin possessed the same property, but beyond this there is no mention of the subject, either by this or any other writer, until the seventeenth century, when Dr. William Gilbert, a native of Colchester, published his treatise 'De Magnete,' in which we find many important and interesting particulars. These received farther illustration from the experiments of Boyle, Otto Guericke, Dr. Wall, and some others, but more especially from Mr. Hawksbee, who, in his work on electricity, first noticed the electrical power in glass, and the light proceeding from it. He also first heard the snapping noise that accompanies excitation, and noticed the different phenomena relating to electrical attraction and repulsion: besides, by introducing the glass globe into the electrical apparatus, he much facilitated his own experiments and those of others. After an interval of about twenty years, Mr. Stephen Grey added very materially to the science of electricity by numerous important experiments. He first showed how the power of native electrics might be communicated to other bodies in which it cannot be excited, by supporting them on silken lines, hair lines, cakes of resin or glass. He also more accurately distinguished between electrics and nonelectrics, and displayed the effect of electricity on water more clearly than Gilbert had done.

The experiments of Mr. Grey were elucidated and enlarged by M. du Fay, member of the Academy of Sciences at Paris. He observed that electrical operations were obstructed by great heat, as well as by a moist air; that all bodies, both solid and fluid, would receive electricity, when placed on warm or dry glass or sealing wax: that those bodies which are naturally the least electric have the greatest degree of electricity communicated to them by the approach of the excited tube. He first observed the electric spark from a living body suspended on silken lines, and established a principle first suggested by Otto Guericke, that all electric bodies attract others that are not so, and repel them as soon as they are become electric by the vicinity or contact of the electric body. He likewise distinguished electricity into two kinds, which he called vitreous, as belonging to glass, rock, crystal &c., and resinous, as applied to that of amber, gum, lac, &c.; the former of these has since been called positive electricity, and the latter negative.

Mr. Grey resumed his experiments in 1734, the result of which was the discovery of conductors. He also concluded from several experiments that the electrical power was of the same nature as that of thunder and lightning. Desaguliers and other experimentalists in France, England, and Germany, followed up the experiments of Mr. Grey with further researches, which displayed the power of electricity in new forms, particularly by the discovery that if electricity be accumulated in a phial, it may be discharged again so as to occasion the electric shock. Mr. Van Kleist, of Leyden, first observed the property of the phial, and Cunæus followed it by exhibiting the experiment. Mr Muschenbrock, who also tried the experiment with a very thin bowl, assured M. Reaumur, in a letter, that he felt himself struck in his arms, shoulder, and breast, so that he lost his breath, and was two days before he recovered from the effects of the blow, and the terror which this unexpected result produced. He added that he would not receive a second shock for the whole king

dom of France. M. Allemand made the experiment with a common beer glass, from which he found himself powerfully affected in his breath, and felt so severe a pain all along his right arm, that he apprehended serious consequences from it. These inconveniences, however, passed off after a few days, and others being induced to repeat the experiment, the practice of electricity became soon after common, and was, after a time, also applied to medical purposes. Machines of different forms were now invented, and the electrical apparatus was continually enlarged, by some new device, to increase the force or direct the operations of the electricity; among other things, when it was ascertained that lightning was no other than electrical matter, conducting rods began to be employed on the tops of buildings and on the masts of vessels, for the purpose of saving them from the effects of storms. Many important treatises on the science of electricity have been written within the last century, by Adams, Cavallo, Cavendish, Ferguson, Galvani, Franklin, Faraday, &c.

ELECTRIFYING. The communication of electric matter to any body; when this is effected by means of a charged phial, it is called an electric shock.

ELECTROMETER. An instrument for measuring the quantity and determining the quality of the electricity in any electrified body

ELECTROPHORUS. A machine consisting of two plates, one of which is a resinous electric and the other metallic. When the former is once excited by a peculiar application of the latter, the instrument will furnish electricity for a considerable time. This is one of the ingenious contrivances devised by Professor Volta, about the year 1774, which may serve as a good substitute for the electrical machine When properly constructed, it has been known to retain its electricity for three weeks.

ELECTUARY (in Pharmacy). A medicinal composition, in which honey or sirup forms a necessary ingredient.

ELEGIAC VERSE. A sort of verse used in elegies

ELEGY. A plaintive kind of poetry, or a funeral song

ELEMENTS (in Chemistry) The first principles of which bodies were supposed by the ancients to be composed; these were fire, air, earth, and water. In modern chemistry no such elementary principles are admitted, because it is considered that all bodies either are or may be decomposed

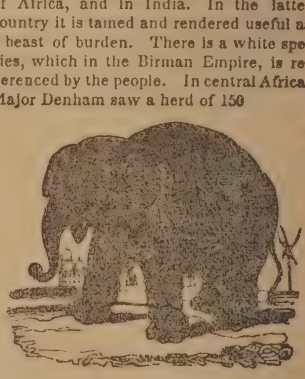
ELEMENTS (in Geometry). The infinitely small parts of a right line, curve, or solid.

ELEMENTS (in Science). The first principles of any science.

ELEMENTS (in Divinity). The bread and wine prepared for the sacrament of the Lord's Supper.

ELEMENTS (in Grammar). The letters of the alphabet, which are the elements of language

ELEPHANT. The largest, strongest, and most sensible of all quadrupeds. It is not carnivorous, but feeds on herbs, and all sorts of pulse. It is naturally very gentle but when enraged is very terrible. It is common in the central and southern parts of Africa, and in India. In the latter country it is tamed and rendered useful as a beast of burden. There is a white species, which in the Birman Empire, is reverenced by the people. In central Africa Major Denham saw a herd of 150



ELEVATION (in Astronomy). The height of the equator, pole, or star, &c above the horizon.

ELEVATION (in Architecture). A draught or description of the face or principal side of a building, which in common language, is called the upright

ELEVATION (in Gunnery). The angle which the chase of a cannon or mortar makes with the place of the horizon.

ELEVATION OF THE HOST (in the Romish Church). That part of the ceremony of the mass which consists in the priest's raising the host above his head, for the adoration of the people.

ELF. A wandering spirit supposed to be seen in unfrequented places.

ELGIN MARBLES. Curious marbles brought by the Earl of Elgin out of Greece, and deposited in the British Museum.

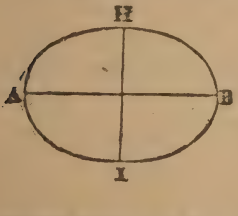
ELISION (in Grammar). The striking out a vowel at the end of a word, as 'th' arch,' for 'the arch.'

ELIXIR. A very powerful tincture. The Grand Elixir is another word for an all-powerful medicine.

ELK. The largest of the deer kind, and inhabits the northern parts of both continents. It is called Moose in America

ELL. A measure of length, different in different countries. The English and Flemish ells are the most used: the former of which is three feet nine inches, or one yard and a quarter; the latter only three quarters of a yard.

ELLIPSIS, or ELLIPSE. A curve which cuts the cone obliquely through both sides It is vulgarly called an oval, as in




the subjoined figure, A H B I, where A B is the transverse diameter, H I the conjugate diameter

ELM. A sort of tree which grows to a very great height, and thrives best in a rich black earth. The timber of elm in England is next to that of oak for value, being particularly useful for mills.

ELOCUTION (in Rhetoric). The adapting words and sentences, to the things or sentiments to be expressed. It consists in apt expressions, the happy order in disposing the words, and a certain musical cadence which arises from the whole

ELONGATION (in Astronomy). The removal of a planet to the farthest distance it can be from the sun, as it appears to an observer on the earth.

ELOPEMENT (in Law). The voluntary departure of a wife from her husband to go and live with an adulterer; in common acceptation, the secret departure of any female with her lover.

ELYSIAN FIELDS. The paradise of the heathens.

EMANCIPATION. A deliverance from slavery or servitude; also the release of the Roman Catholics from the disabilities which prevented them from filling offices of state.

EMBALMING. The filling a dead body with spices, gums, and other antiseptics, to prevent it from putrifying. The Egyptians practised this art most successfully, so that bodies which they embalmed two thousand years ago, remain whole to this day.

EMBARGO (in Commerce). A prohibition issued by authority on all shipping, not to leave any port.

EMBER DAYS. Particular days of fasting and humiliation in the Ember weeks.

EMBER WEEKS. Four seasons in the year, more particularly set apart for prayer and fasting, namely, the first week in Lent the next after Whitsuntide, the fourteenth of September, and the thirteenth of December.

EMBEZZLEMENT. The appropriating a thing to one's own use, which has been intrusted to one.

EMBLEM. A kind of painted enigma, or certain figures painted or cut metaphorically, expressing some action.

EMBOSSING. A sort of sculpture or carving, where the figure is protuberant, and projects from the plane in which it is cut.

EMBRASURE (in Architecture). An enlargement made in a wall.

EMBRASURE (in Fortification). A hole in a parapet for the reception of a gun.

EMBROCATION A kind of fomentation.

EMBROIDERY. Figured work wrought on silk, cloth, or stuffs

ELYTRUM. The first pair of wings in beetles, which are hard, and cover the second pair.

EMBOLITE. A mineral, chiefly chlorobromide of silver.

EMBOSSING. Covering wood, paper, cloth, &c., with ornamental raised work.

EMBRASURE. An opening in a wall, usually with sloping sides, for the fire of a gun, or a window.

EMBRITHRITE. A mineral, chiefly sulphide of antimony and lead.

EMBRYO. The earliest stage of a young animal, before it is sufficiently advanced to be termed a fœtus: consists of three layers. 1. The outer, which becomes developed into nerves, muscle, and bone. 2. The medial, which forms the heart and circulating system. *Naked E.*=Spore. *E. in a receptacle*=Seed. *E. of man:* at first resembles all other embryos of plants and animals; successive differentiations limit it consecutively to animals, vertebrata, mammalia, placental mammalia, quadrumana, and man.

EMBRYOLOGY. The science of the successive modifications through which any organism passes in its gradual development from the germ stage to the adult form; a sub-division of Biology.

EMERALD. A brilliant greenstone, a silicate of aluminum and glucinum; a pure variety of beryl; a mineral of the topaz group, crystallizing in hexagons. *Oriental E:* a green variety of sapphire. *E. copper*=Dioptase.

EMERSION. The reappearance of a planet, &c., after eclipse; the opposite of immersion.

EMERY. A coarse variety of corundum or native alumina.

EMETINE. A base obtained from ipecacuanha; used as an emetic.

EMEU. A large bird of New Holland, allied to the cassowary and ostrich. Its wings, which are useless for flight, serve to balance the body when running. The Emeu wren is also an Australian bird, bearing a close resemblance to the emu.

EMISSION THEORY OF LIGHT. That light is the effect of emission of infinitely minute particles of matter.

EMOLLESCENCE. In metallurgy, the softening of a metal when beginning to melt; the lowest degree of fusibility.

EMPAISTIC. In the arts, a kind of inlaid work, which bears some resemblance to the modern buhl, and consists of inlaid threads or pieces of different metals impressed into other metals.

EMULSIN. A substance, found in almonds, which acts as a ferment on amygdalin, and converts it into glucose, &c.

EMULSION. A compound of oil and water obtained by use of a third body, such as which will combine with both, named from its milky appearance.

EMYS'S SYSTEM. A method of constructing large arches by a number of united layers of timber.

ENCAMPMENT. The pitching of tents or disposing an army in an open country.

ENCHANTMENT. Magical charms practised for purposes of fraud

ENCHASING. The beautifying gold silver, and other metal works by figures It is practised only on hollow thin works, as watchcases, caneheads, and the like. It is performed by punching or driving out the metal to form the figure, so as to stand out prominent from the surface of the metal.

ENCHYRIDION. A manual or small volume.

ENCLOSING. The parting off of common grounds, into distinct possessions.

ENCORE. Literally, again; to be repeated, as applied to any song or performance in a theatre.

ENCROACHMENT (in Law). An unlawful gaining upon the rights and possessions of another.

ENCYCLOPÆDIA. A dictionary which professes to explain the whole circle of the sciences.

ENDEMIC. An epithet for disorders to which the inhabitants of particular countries are subject.

ENDIVE. An herbaceous plant, a sort of succory, used as a vegetable for the table.

ENDORSING. Writing on the back of a bill of exchange or check.

ENDOWMENT (in England). The giving or assuring a dower to a woman also the assigning certain rents and revenues for the maintenance of a vicar, almshouses, &c.

ENFRANCHISEMENT (in Law). The making a person a denizen, or free citizen.

ENGINE (in Mechanics). A compound machine, consisting of one or more mechanical powers, as of screws, levers, pullies, &c. in order to raise, cast, or sustain any weighty body.

ENGINEER. One whose office is to conduct the attack and defence of all fortresses.

ENGLISH, or the ENGLISH LANGUAGE. A compound of the original British or Welsh, the Anglo-Saxon, Norman, French, Latin, and Greek, which is now spoken not only in all parts of Great Britain, but throughout North America and all the English colonies in different parts of the habitable globe.

ENGRAVING. The art of representing figures in metal, wood, or stone, by means of lines cut thereon.

ENGRAVING, History of Engrav

ing, as far as regards the epresentation of figures or characters on metal, stone, or wood, was one of the first arts on which human ingenuity was exercised. Moses speaks of the art of engraving as no new invention. The tables which God delivered to Moses are said to be the work of God, and the writing was the writing of God engraved upon the tables. The first engravings of human workmanship mentioned in the Scriptures, were executed by Aholiab and Bezaleel, for the decoration of the tabernacle and the ornaments for the dress of Auron. It is also said that the tables of Seth contained the astronomical discoveries of that patriarch and his sons. In process of time we find that the clasps, buckles, rings, and other ornamental parts of dress, as also the cups and other household furniture, together with the arms of military chieftains, were probably enriched with the first specimens of engraving. The shields of the Carians, as described by Herodotus, were ornamented with rude portraitures, as were also those of the ancient Celtic nations, but the hieroglyphic figures of the Egyptians afford the best and earliest specimens of engraving properly so called. The Phœnicians probably learned this art from the Egyptians; and their coins, which are looked upon to be among the most ancient extant, prove, as Mr. Strutt observes, that they were by no means indifferent artists. It is, however, generally supposed, that there are no remains in antiquity, either in sculpture, painting, or engraving, prior to those of Etruscan original. Some of those which are preserved in the British Museum are exceedingly rude, and evidently executed with the graver only upon a flat surface, and if filled with ink and run through a printing press, provided the plate would endure the operation, might produce a fair and perfect impression.

The art of engraving on their shields was practised by the Saxons, in common with the other northern tribes. Alfred the Great encouraged this among the other arts, and the works of the Saxon artists, as their shrines and caskets, rose by his encouragement and that of his successors, considerably in estimation, not only in England but on the continent. Strutt mentions a curious remnant of antiquity in the Museum at Oxford, namely, a very valuable jewel, made of gold, and richly adorned with a kind of work resembling filagree, in the midst of which is seen the half figure of a man, supposed to be Saint Cuthbert. The back of this jewel, which was engraved by command of Alfred, is ornamented with foliage very skilfully executed. Saint Dunstan, the celebrated archbishop of Canterbury, who died A. D. 988, is also noted for his skill in the arts. Osborn, his biographer, enumerates among his other endowments that he could 'scalpello imprimere ex auro, argento, ære, et ferro.'

After the Conquest, it appears that engraving, which had hitherto been mostly followed in conjunction with the sister arts of carving and chasing, was now followed as a distinct art, and carried to a higher state of perfection, as may be learned from the brass plates so frequently to be met with in the English churches or on the tombstones in the fourteenth and following centuries. These are usually ornamented with the effigies of the person to whose memory they are dedicated, and are evidently executed by the graver only; the outlines being first made, then the shadows are expressed by strokes strengthened in proportion as they required more force, and occasionally crossed with other strokes a second or third time, precisely in the same manner as copperplate is at present engraved for printing. Thus we see that the art of engraving was for a long time practised, before it was made to answer the noble purpose, of perpetuating the labours of the painter

That branch of the art of engraving which consists in taking impressions on paper was, according to Giorgio Vasari, first practised by the Italians, and took its rise from an accident. One Maso Finiguerra, an ingenious goldsmith and sculptor of Florence in the fifteenth century, used to design and emboss figures on gold and other metals, and before he inlaid them, he used to fill the engraving with earth, and cast melted sulphur on it, which gave it a sort of olive colour, after which, pressing a piece of damp paper on it with a smooth wooden roller, the engraving on the metal remained imprinted on the paper just as if it had been designed with a pen in consequence of which Andrew Mantegna set about making regular prints from his engravings. The correctness of this story, however, as far as regards the priority of the discoverer, is disputed by Strutt and others.

It should seem that impressions from engravings on wood, had been taken in Germany prior to this, and that the brief malers, or the makers of playing cards, practised the art of card making about the fifteenth century, and from the making of cards were led to the execution of other figures of a devout nature, so as to form a

kind of books containing a history of the Old and New Testament, which was printed only on one side of the paper. In this manner the engraving both in wood and brass continued to be followed by the same artists, and in their hands made great advances to perfection. Martin Schoen, of Culmbach, was one of the first who distinguished himself in this art. Israel von Mecheln, of Mechelen, was the rival of of Schoen; the style of which latter artist was followed by Albert Durer. After this arose a succession of distinguished engravers in France, England, and Holland.

Engraving in chiaro-scuro is justly ascribed to the Germans, and was first practised by Muir. At what time etching was introduced, is not known. One of the most early specimens of a print, by Albert Durer, is known by the name of the Cannon, dated 1518.

Engraving with dots, called stippling, was of Italian invention, and was first practised by Agostino de Musis. The method of engraving in mezzotinto was commenced about the middle of the seventeenth century. Engraving in aquatinta is a recent invention. In modern times, every species of engraving has made great advances toward perfection. For mezzotinto and line engraving, steel has been lately brought into use, which not only enables the engraver to give greater delicacy, and a higher finish to his works, but affords ten times as many good impressions. Copper is now little used for fine engravings.

In wood engraving there has been still greater improvement. A few years since it was imagined that the birds and beasts of Bewick could never be surpassed. But Branstone Wright, Thompson and others, in England have given a degree of spirit, delicacy and beauty to their productions, of which it was supposed that wood engravings were unsusceptible. They have shown that the art is one of great scope, and is capable of producing effects superior, in some departments, to line engraving.

ENGROSSING. The writing any thing fair in a large hand.

ENLISTING. The entering for a soldier into the military service for a certain stipulated time, as for a term of seven years, or during a war &c.

ENSIGN The banner under which the soldiers are ranged, according to the different regiments to which they belong; also the officer who carries the ensign or colours.

ENNUI. Listless fatigue.

ENNEANDRIA (in Botany). One of Linnæus's classes of plants, including such as bear hermaphrodite flowers, with nine stamens, as the bay, the cashew nut, the flowering rush, &c

ENTABLATURE. That part of a column which is over the capital, comprehending the architrave, frize, and cornice.

ENTAIL. An entailed estate, or an estate abridged and limited, by certain conditions prescribed by the first donor.

ENTERTAINMENT. A species of theatrical representation following a tragedy or comedy; it may be either a farce or a pantomime, &c.

ENTOMOLOGY. The science which treats of insects, as to their structure, habits, and varieties. The body of an insect consists of four principal parts, namely, the head, the trunk, the abdomen, and the limbs or extremities. The head is furnished in most insects with eyes, antennæ or horns, and a mouth. The eyes are various, both in colour, shape, and number, in different kinds, some being of a different colour from that of the head, and some of the same colour, some placed close together, or almost touching each other, some having the pupil glassy and transparent, others having it scarcely distinguishable Many insects have, besides the large eyes, also three small spherical bodies placed triangularly on the crown of the head, called ocelli, or stemmata. The antennæ are two articulated moveable processes, placed on the head, which are also subject to great variety in their form and structure, being setaceous, or bristle shaped, filiform, or thread-shaped, &c. The mouth in most insects is situated in the lower part of the head, and consist of the lips, upper and lower; the mandibles, or horny substances, one on each side of the mouth; the maxillæ, or jaws, two membranaceous substances, differing in figure from the mandibles, under which they are situated; the tongue, an involuted tubular organ, which constitutes the whole mouth in some insects, as the sphinx; the rostrum, beak, or snout, a moveable articulated member in the grasshopper, the aphis, &c; the proboscis, or trunk, which serves as a mouth in the house fly, bee, and some

other insects; the feelers, small moveable filiform organs, placed mostly on each side the jaw, and resembling the antennæ, but much smaller; these vary in number from two to six in different insects.

The trunk, which is the second general division of which an insect consists, comprehends that portion situated between the head and the abdomen. This consists of the thorax, or upper part of the body, to which the first pair of legs is attached; the breast, or under part of the thorax, to which the four posterior feet are attached; the breast bone, a ridge running under the breast, which is conspicuous in some insects; and the scutellum, or escutcheon, a lobe-like process, situated at the posterior part of the thorax.

The abdomen, or third principal portion of an insect's body, is composed of annular joints, or segments, which vary in form and number in different insects; this is distinguished into the back, or upper part, and the belly, or under part. The motion of the abdomen is most visible in the fly and bee tribes. To this division belong also the tail and the sting. The tail sometimes spreads like a leaf, as in the cockroach; and in other insects is bristle-shaped. The sting, which is peculiar to insects of the bee tribe and some few others, is sometimes simple, having but one dart, and sometimes compound, having two darts. In bees and wasps the sting is retractile, that is, capable of being drawn in; but in other insects it is almost always hid in the body, or seldom thrust out. In some tribes of insects it exists in the males, in others in the females only, but seldom in both sexes.

The members or extremities of insects are the legs and the wings Insects have sometimes six legs, but never more, except what are observable in the larvæ, which are termed spurious feet. The feet vary in their form and use, being formed either for running, swimming, or leaping, with or without claws or spines, &c. The wings are mostly two, but sometimes four in number; mostly placed on each side the insect, so as that each pair should correspond in situation, form, &c.; but where there is more than one pair, the first are mostly larger than those behind. The wings are greatly diversified as to form, figure texture, construction, &c. To the wings belong also the elytra, or wing cases, and the halteres, or poisers. The elytra are two coriaceous wings, which are expanded in flight, but when at rest serve to cover the abdomen and enclose their membranaceous wings, as in insects of the beetle tribe; the poisers are two globular bodies placed on slender stalks behind the wings in the tribe of winged insects, so called because they are supposed to keep the insect steady in its flight.

The internal parts of insects are less perfect and distinct than those of larger animals, and of course less known. The brain of insects is altogether different from the substance which bears that name in other animals, being little more than ganglions of nerves, two in number, that are observed in the crab, lobster, &c. The muscles consist of fasciculi of fibres, that serve apparently the office of producing two motions, namely, that of extending and that of bending. Some insects appear to be furnished with some floating vessels which secrete a fluid varying in colour in different tribes, but very similar to saliva The œsophagus, or organ of deglutition, is a straight short tube, consisting of annular muscular fibres, like the proboscis of the common fly.

The organs of digestion vary very much in different tribes of insects. Most have a single stomach, but some have it double, and others have a manifold stomach. In bees the stomach is membranaceous, fitted to receive the nectar of flowers: the bug, the boat fly, and such as feed on animal substances, have a muscular stomach. The beetle, ladybird, earwig, and some others that feed on other insects, have a double stomach, the first of which is muscular, after the manner of a gizzard, and the second is a membranaceous canal. Insects such as the cricket and grasshopper, which have many stomachs, seem to employ them much after the manner of the ruminating animals.

Instead of organs of respiration, it has been found that they have spiracula running on each side the body that serve for the reception of the air, and other vessels proceeding from these that serve for the exspiration of air. Insects, among the ancients, were reckoned to be bloodless animals; but it has since been ascertained that the process both of circulation and secretion goes forward in the bodies of insects, although in a different manner. The process of secretion is supposed to be performed by means of a number of long slender vessels, which float in the internal cavity of the body, serving to secrete different fluids, according to the nature of the animal; thus the bee, wasp, sphinx, &c. have two vessels situated at the bottom of the sting, through which they discharge an acrid fluid. From the ant is extracted

an acid well known to chymists, and other insects have other fluids peculiar to themselves. As to the process of circulation in insects, little more is known at present than that a contraction and dilatation of the vessels is observable in some kinds, particularly in caterpillars; but the fluid which is supposed to supply the place of blood is not of the same colour.

The sexes in insects are of three kinds, namely, the males, the females, and the neuters, which have not the usual marks of either sex. The sexes are distinguished by the difference of size, brightness of colours, form of the antennæ, &c.; the male is always smaller than the female, and in some cases the female is several hundred times bigger than the male; on the other hand, the males have brighter colours and larger antennæ. In many cases the females have no wings; and in some instances, as that of the bee, the female has a sting, but the male none

The metamorphoses of insects is one characteristic of these animals which distinguishes them from all others. In most insects the egg is the first state; but there are examples of viviparous insects, as in the case of the aphis, the fly, &c. The insect in the second or caterpillar state, is now called the larva, but formerly the eruca. The larvæ differ very much in different insects; those of the butterfly and moth are properly called caterpillars, those of the flies and bees are called maggots. The larvæ of the beetle tribe differ from the complete insect only by being destitute of wings. Butterflies, in their caterpillar state, are very voracious, but in their complete state they are satisfied with the lightest and most delicate nutriment. The third state into which insects transform themselves is the pupa, or chrysalis. In most of the beetle tribe the pupa is furnished with short legs, but the pupa of the butterfly tribe is without legs: that of the fly tribe is oval, but that of the bee tribe is very shapeless. The last and perfect state of insects is called by Linnæus the image, in which state it continues until its extinction. The life of insects varies as to its duration. Some, as bees and spiders, are supposed to live for a considerable time; but others will not live beyond a year, a day, or some hours, in their perfect state, although they will continue for some time in their larva state. Water insects generally live longer than land insects.

As to the classification of insects, it suffices here to observe, that Linnæus, whose system is now generally followed, has classed them according to their wings into seven orders, namely, 1. Coleoptera, or such as have shells that cover the wings, as the beetle tribe. 2. Hemiptera, or half winged insects, as the cock-roach, locust, grasshopper, bug, &c. 3. Lepidoptera, or scaly winged insects, as the butterfly and the moth. 4. Neuroptera, or nerve-winged or fibre-winged insects, the wings of which are furnished with conspicuous nerves, fibres, or ramifications, as the dragon fly, May fly, trout fly. 5. Hymenoptera, or insects with four wings and a sting, as the bee, wasp, hornet, termes, or white ant, &c. 6. Diptera, or two-winged insects, as the gnat, common fly, musquitto, horse-leech, &c. 7. Aptera, or insects without wings, as the spider, flea, lobster, scorpion, &c.

ENTOMOLOGY, History of. There are scattered notices respecting insects at an early period, from which we may infer that they had not escaped the notice of inquirers into the animal kingdom. Among the books of Solomon now lost to the world, it is recorded that he treated on insects or creeping things. Hippocrates wrote a work on insects, from which Pliny has given some few extracts. The labours of Aristotle on this subject are still extant, and show that he had made insects his particular study. What he has written on this subject has not been surpassed in accuracy by any thing that has followed Nicander, Callimachus, and above all Theophrastus, are mentioned as writers on insects; but there is no work extant on that subject before the time of the Romans. Virgil treats on the subject of bees, which were much cultivated in his time. Pliny has devoted the eleventh book of his Natural History to this subject, and mentions several Latin writers who had directed their attention to it. Ælian, in his work on animals, devotes several chapters to particular insects, as the spider, scorpion, cricket, &c.; besides that, the subject is slightly touched upon by the medical writers Ætius, Paulus Ægineta, Trallian, and Oribasius, and also by the Arabian authors Rhazes, Avicenna, Avenzoar, and Averrhoes. From the twelfth to the fifteenth century no writer of any note occurs on the subject of entomology. Albertus Magnus has devoted some small part of his work De Animalibus to this subject. Agricola, in his work De Animantibus Subteraneis, which appeared in 1549, has given the first systematic arrangement of insects, by dividing them into creeping insects, flying insects, and swimming insects. This work was followed in the

same century by Dr. Wotton's work, De Differentiis Animalium, and cursory remarks on insects in Rondeletius Libri de Piscibus Marinis, and in Conrad Gesner's work De Serpentium Natura.

A far more important production on the subject of insects appeared in 1602, from the pen of that industrious naturalist Aldrovandus, entitled De Animalibus Insectis, in which he divided them into two classes, terrestria and aquatica, and subdivided them into orders, according to the number, nature, position, &c of their wings. This work was followed by the Historia Animalium Sacra of Wolfang Frenzius, and other works from the pen of Fabius Columna, Hoefnagle, and Archibald Simpson. This latter work is entitled to notice because it was the first work on entomology that had appeared in Britain.

The graphic art was also called into aid about this period, to illustrate the subject of entomology, as appears from the works of the celebrated engravers Hoefnagle, Robert Aubret, De Bry, Vallet, Robin, Jonston, &c. The invention of the microscope also afforded great facilities to the study of entomology, and enlarged the sphere of observation very considerably. Of these facilities many naturalists amply availed themselves, as Hooke, Leuwenhoek, Hartsoeker, and others. The latter writer discovered the circulation of the fluids in insects. Christopher Marret published, in 1667, a work containing an account of British insects; and a particular description of the tarantula was published about the same time by Wolferdus Sanguerdius; but the most important work on this subject was Swammerdam's General History of Insects, which displayed an anatomical knowledge of these animals that raised the reputation of this writer very high. This appeared in 1669, and in 1678 Lister's valuable History of English Spiders; the year following the first part of Madame Merian's extensive work on the metamorphoses of lepidopterous insects, which was followed by other parts in 1683, 1718, and 1726, which last is a splended performance on the insects of Surinam. Leuwenhoek also, about the same time, added materially to the stock of entomological knowledge, by giving an account of the anatomy of insects, drawn from microscopical observations. Ray published, in 1710, his Historia Insectorum, which was the joint labour of himself and his friend Willoughby. In this history insects are divided into the transmutabilia and intransmutabilia. The transmutabilia are divided into four orders namely, vaginipennes, those which have wings covered with a sheath, papiliones, the lepidopterous insects; quadripennes, four winged insects; and bipennes, two winged insects: which are again subdivided into families. In 1735, the system of Linnæus was published, which has since been universally adopted. It consisted at first of four orders, which he afterwards increased to the number of seven. Some writers, as Deger, Reitzius, and Fabricius, have attempted to improve upon the Linnæan system, but their alterations have not been admitted.

As to the history of insects, many naturalists since his time have contributed their share to the stock of information, either by the description of the insects in particular parts, or by the description of insects generally. In 1753, appeared the Entomologia Carniolica of Scopoli; in 1769, Birkinfront published Outlines of Natural History of Britain; in Seward's Natural History is given an account of many exotic insects. In 1770 were published Illustrations of Natural History; in 1775 Fabricius published his Systema Entomologiæ; and within the last few years we have had Donovan's Natural History of British Insects, in 15 vols.; Lamarck's Système des Animaux sans vertèbres; Marcham's Entomologia Britannica, and Kirby's Monographia Apium Angliæ.

ENTRY (in Commerce). The act of setting down in merchant's account books the particulars of trade.

ENTRY (at the Custom House). The passing the bills through the hands of the proper officers.

ENTRY (in Law). The taking possession of lands.

ENVELOPE. The cover that encloses a letter or note

ENVIRONS. The country lying round a large town or city.

ENVOY. A person in degree lower than an ambassador, sent on some particular occasion from one government to another.

EPACT (in Chronology). A number arising from the excess of the common solar year above the lunar, by which the age of the moon may be found every year.

EPAULETTE. The shoulder knot worn by a soldier or footman.

EPAULEMENT. A work raised to cover sidewise, made of earth, gabions, &c

EPHEMERAL. Beginning and ending in a day; an ephemeral insect lives but for a day, as the day fly.

EPHEMERIS An astronomical alma-

sack or table, showing the state of the heavens for every day at noon.

EPHOD. A garment worn by the priests of the Jews.

EPIC POEM. A narrative poem formed upon a story, partly real and partly fictitious, the subject of which, is always some hero or distinguished person.

EPICENE (in Grammar). An epithet for the gender of such words as are common to both sexes, as in the Latin, hic et hæc parens.

EPICUREAN PHILOSOPHY. The doctrine taught by Epicurus, that the universe consisted of atoms or corpuscles of various forms, magnitudes, and weights, which, having been dispersed at random through the immense space, fortuitously concurred into innumerable systems. To this scheme of infidelity he added the notion that happiness consisted in sensual indulgence, particularly in the pleasures of the table.

EPICUREANISM, or EPICURISM. The doctrine of Epicurus: the practice of an epicurean or epicure, or of one who is addicted to his sensual gratifications.

EPICYCLE. A little circle that is in the centre of a greater circle.

EPIDEMIC DISEASES. Such as prevail at particular seasons, and spread among the inhabitants of a country.

EPIDERMIS (in Anatomy). The cuticle or scarf skin, that which rises in a blister.

EPIGRAM. A short, witty, pointed poem.

EPIGRAPHE. An inscription on a building, stone, &c.

EPILEPSY, or the FALLING SICKNESS. A convulsion of the whole body, with a privation of sense.

EPILOGUE (in Dramatic Poetry). A speech addressed to the audience when the play is ended.

EPILOGUE (in Rhetoric). The conclusion of a speech, a recapitulation of the whole.

EPIPHANY, vulgarly called TWELFTH DAY. A festival celebrated on the twelfth day after Christmas by some Christians, in commemoration of the manifestation made to the Gentiles of our Saviour's nativity.

EPISCOPACY. A form of church government by bishops.

EPISTILBITE. A crystallized mineral, consisting of soda, silica, alumina, lime, and water; sp. gr. 2·2.

EPIZOANS. In zoology, a class of parasitic animals which infest fishes, &c.

EPISODE. In poetry, a separate incident, which the poet introduces into his narrative as connected with the principal action.

EPITAPH. An inscription on a tombstone.

EPITHALAMIUM. A song sung at weddings.

EPITHET. A word expressive of a quality.

EPITOME. An abridgment or short draught of a book.

EPOCH, or EPOCHA. A term or fixed point of time, whence years are numbered, such as the Creation, 4004 B. C., the Taking of Troy, 1184 B. C.; the Building of Rome, 753 B. C.; the Birth of our Saviour, the commencement of the Christian era, and the Hegira, or the flight of Mahomet from Mecca, A. D. 622.

EPODE (in Lyric Poetry). The third or last part of the ode.

EPOPŒIA (in Poetry). The fable or subject of an epic poem.

EPSOM SALTS. Sulphate of magnesia formerly procured by boiling down the mineral water from the spring at Epsom, but now prepared from sea water. They are used as an aperient.

EQUABLE. An epithet for uniform motion, &c.

EQUALITY. A term of relation between things the same in magnitude, quantity, or quality.

EQUATION (in Algebra). An expression in which two quantities differently represented are put equal to each other by means of the sign of equality, as $7ax + \ldots = b$.

EQUATION, or the EQUATION OF TIME (in Astronomy). The difference between mean and apparent time, or the reduction of the apparent unequal time or motion of the sun, &c. to equable time or motion.

EQUATION, or EQUATION OF PAYMENTS (in Arithmetic). A rule for finding a time when if a sum be paid which is equal to the sum of several others due at different times, no loss will be sustained by either party.

EQUATOR. A great circle on the terrestrial sphere, equidistant from the pole.

EQUATORIAL, or PORTABLE OBSERVATORY. An instrument by which most of the problems in astronomy may be performed.

EQUERRY. In England, an officer who has the care of the king's horses.

EQUES AURATUS. A knight, so called because none but knights were allowed to gild their armour.

EQUESTRIAN. One on horse-back

EQUESTRIAN ORDER. The second rank in Rome, next to the senators.

EQUESTRIAN STATUE. The representation of a person mounted on a horse.

EQUIANGULAR. Having equal angles.

EQUIDISTANT At an equal distance.

EQUILATERAL. Having equal sides.

EQUILIBRIUM An equal balance or equality of weight and poise, as when two ends of a lever hang so even, as to poise neither way

EQUIMULTIPLES (in Arithmetic or Geometry) Numbers and quantities multiplied by one and the same number and quantity, as 12 and 6, which are equimultiples of 4 and 2, called their submultiples.

EQUINOCTIAL, or EQUINOCTIAL LINE. A great circle of the celestial globe, answering to the equator on the terrestrial globe. Whenever the sun comes to this circle the days and nights are equal all over the globe

EQUINOXES. The times when the sun enters the first points of Aries and Libra, that is, about the twenty-first of March and the twenty-first of September, when the days and nights are equal all over the world.

EQUIPAGE (among Travellers). Whatever is necessary for a voyage or journey, as horses, attendants, attire, &c.

EQUIPAGE (in Military Affairs). Whatever is necessary for an army on its march, as tents, baggage, kitchen furniture, &c.

EQUIPOLLENCE. Equality of force and power; as equipollent propositions, such as have the same meaning, though differently expressed.

EQUITY (in Law). A correction of the common law wherein it is deficient.

EQUITY, COURT OF. A title given by way of distinction to the Court of Chancery, in which the rigour of other courts is moderated, and controversies are supposed to be determined, according to the exact rules of equity and conscience.

EQUIVOCAL. An epithet for words which have a double meaning, and may be applied equally well in both.

EQUIVOCATION. The use of equivocal terms, which may be understood by the hearer in a different sense from that in which they are taken by the speaker.

EQUULEUS. An old constellation, having from four to six stars.

ERA. See ÆRA.

ERIDANUS. A constellation in the southern hemisphere, containing, according to different authors, from nineteen to eighty-four stars.

ERMINE. A little animal about the size of a squirrel, the fur of which bearing the same name, is very valuable. This animal is white all over, except the tip of the tail which is black. The common weasel of the United States, which in winter is white is an ermine. In some parts of the country it is sometimes called Stoat.

ERMINE (in Heraldry). A fur used in coat armour, and supposed to represent the linings and doublings of mantles and robes. It is represented by a white field powdered or semé with black spots.

ERRATUM. An error of the press; is the plural, Errata, errors of the press.

ERRATIC. Wandering, not fixed.

ERUPTION (in Medicine). A breaking forth in a morbid manner, as spots on the skin.

ERUPTION (in Mineralogy) The breaking forth of fire, ashes, stones, &c from a volcano

ERYSIPELAS, vulgarly called SAINT ANTHONY'S FIRE. A disorder in the skin, which consists in a swelling, with redness heat, and pain.

ESCALADE. An attack of a fortified place by scaling the walls with ladders, without breaking ground or carrying on a regular siege.

ESCALOP SHELLS. The shells of escalops, a sort of fish, which are regularly indented.

ESCAPE (in Law). A violent or privy evasion out of some lawful restraint.

ESCAPEMENT. See SCAPEMENT.

ESCARBUNCLE See CARBUNCLE.

ESCHEAT. In England, lands or profits that fall to a lord within his manor, either by forfeiture or the death of the tenant.

ESCHEATOR. In England, an officer formerly appointed to make inquests of titles by escheats.

ESCORT. A company of armed men, attending by way of distinction or protection.

ESCUAGE. A kind of knight's service.

ESCULENT A plant that may be eaten.

ESCUTCHEON, or SHIELD. The representation of the ancient shields used in war, on which armorial bearings are painted.

ESPALIER. A low branching fruit tree, having the branches trained to a frame

ESPIONAGE. A system of employing spies either in military or political affairs.

ESPLANADE (in Fortification). The sloping of the parapet of the covered way towards the campaign.

ESQUIRE. In England, anciently, the person that attended a knight in time of war, and carried his shield; now, a title of honour given to the sons of knights, or those who serve the king in any worshipful calling, as officers of the king's courts, counsellors at law, &c. In the United States this title is given to lawyers, and by courtesy to many other persons.

ESSAY. A short discourse or treatise on some subject.

ESSAYIST. A writer of essays, of which there have been many in England, as Addison, Steele, Swift, Pope, Johnson, Hawkesworth, Goldsmith, Mackenzie, &c. whose works have been collected under the name of the British Essayists

ESSENCE (in Chemistry) The purest and subtlest parts of a body, drawn by means of fire, &c

ESSENTIAL OILS. Acrid, volatile oils, having a strong aromatic smell, which are drawn from plants by distillation, in distinction from native oils procured by section.

ESSOIN (in Law). An excuse by reason of sickness or any other just cause, for one that is summoned to appear and answer an action, &c.

ESTABLISHMENT (in Military Affairs). The quota of officers and men in an army.

ESTABLISHMENT (in Trade). The stock, capital, &c. which are essential for carrying on a business.

ESTAFETTE. A military courier, sent from one part of an army to another.

ESTATE (in Law). The title or interest a man has in lands or tenements

ESTATES OF THE REALM. In Europe, the distinct parts of any state or government, as the King, Lords, and Commons in England.

ESTIMATE. A calculation of the expenses of any undertaking, made according to the regular charges of trade, as the estimate of builders, engineers, printers, publishers, &c

ESTOPPEL. An impediment or bar to an action.

ESTRAY. A tame beast found without any owner known

ESTREAT (in Law). The copy of an original writing, particularly of the penalties or fines, to be levied by the bailiff or other officer, of every man for his offence.

ESTUARY. The mouth of a lake or river, or any place where the tide comes.

ETC. or &c. i. e. ET CÆTERA. Literally, And other things not mentioned.

ETCHING. A method of engraving, in which the lines and strokes are eaten in with aquafortis

ETHER. A very volatile fluid, produced by the distillation of alcohol with an acid.

ETHICS. The science of moral duties, showing the rules and measures of human conduct which tend to happiness

ETIQUETTE. Rules and ceremonies of good manners, observed either at court or in genteel life.

ETYMOLOGY. A branch of grammar, which teaches the original and derivation of words.

ETYMOLOGIST One who traces words from their original sources

EVACUATION (in Medicine). The discharge of superfluous humours or excrements out of the body.

EVACUATION (in Military Affairs). The leaving a town, fortress, or any place which has been occupied as a military post or position

EVANGELIST. Literally, the bringer of good tidings; particularly, the writers of our Saviour's history, as Matthew, Mark, Luke, and John.

EVAPORATION (in Chemistry). A process in which the superfluous moisture of any liquid substance is dispersed by means of fire.

EUCHARIST. The sacrament of the Lord's Supper, so called, because the death of our Redeemer is thereby commemorated with thankful remembrance.

EUDIOMETER. An instrument for ascertaining the purity of air, or the quan

tity of oxygen and nitrogen in atmospheri cal air.

EVERGREEN (in Gardening) A species of perennials which preserve their verdure all the year round, such as hollies, laurustinus, bays, pines, firs, &c.

EVERLASTING PEA. A perennial of the vetch kind, which grows naturally in some places, and may be cultivated with advantage as food for cattle.

EVIDENCE (in Law). The testimony adduced in a court, which may either be written, as by deeds, bonds, and other documents, or verbal, by witnesses examined vivâ voce.

EULOGY Praise or commendation of a person.

EVOLUTION (in Arithmetic). The extraction of the roots of any power.

EVOLUTION (in Military Tactics). The complicated movement of a body of men when they change their position.

EVOLUTION (in Geometry). The unfolding of a curve.

EVOLUTION (in Botany). The expansion or opening of the bud

EUPHONY (in Grammar). Good sound in pronouncing a word. It is properly a figure, whereby a letter that is too harsh is converted into a smoother, contrary to the ordinary rules, for the purpose of promoting smoothness and elegance in pronunciation.

EURITHMY (in Painting, Architecture, and Sculpture). A certain majesty and elegance of appearance in the composition of diverse parts of a body, painting, or piece of sculpture. Vitruvius, who ranks eurithmy among the essentials in architecture, makes it to consist in the beauty of the construction or assemblage of the several parts of the work

EWE. The female of the sheep

EX (in Composition). Now signifies late, as the ex-minister, the late minister.

EXACTION (in Law). Injury done by an officer, or one who, under colour of his office, takes more than what the law allows.

EXAGGERATION. The making things appear, more than they really are.

EXALTATION (in Chemistry). The raising a thing to a higher degree of virtue, or increasing the principal property in a body.

EXAMINATION (in Law). The examining of witnesses by questions.

EXAMINERS (in Law). Two officers in the Court of Chancery, in England, appointed to examine witnesses.

EXCELLENCY In England, the title given to ambassadors, commanders, and others not entitled to that of highness In America the title is given to the President, to ambassadors, and governors of states

EXCENTRICITY. See ECCENTRICITY

EXCEPTION (in Law). A stop or stay to any action, which consists either of a denial of the matter alleged in bar to the action, or, in the Court of Chancery, it is what is alleged against the sufficiency of an answer.

EXCHANGE (in Commerce). The trucking or bartering one thing for another; also the place where merchants meet for the purpose of transacting business: and likewise the giving a sum of money in one place for a bill, ordering the payment of it in another place.

EXCHANGE (in Arithmetic). The reducing of moneys of different denominations from one to another, or the method of finding what quantity of the money of one place is equal to a given sum of another, according to a certain course of exchange

EXCHANGE (in Law). A mutual grant of equal interests, the one in consideration of the other.

EXCHANGE BROKERS. Men who give the merchants information how the exchange goes.

EXCHEQUER (in Law). In England the office or place, where the king's cash is kept and paid.

EXCHEQUER COURT. In England, a court in which all causes relating to the revenue are tried; also the Prerogative Court of the Archbishop of York.

EXCHEQUERED. Summoned before the Exchequer, in England, to answer any charge of defrauding the revenue, &c.

EXCISE DUTIES. Inland taxes on commodities of general consumption.

EXCOMMUNICATION. An ecclesiastical censure, whereby a person is excluded from communion with the church, and in England deprived of some civil rights.

EXCORIATION. The rubbing or peeling away the cuticle or external skin.

EXCORTICATION The stripping a tree of its bark

EXCRESCENCE (in Surgery). Any preternatural formation of flesh on any part of the body, as warts wens, &c

EXECUTION (in Law). A judicial writ granted on the judgment of the court whence it issues.

EXECUTION (in Military Affairs). The plundering and wasting a country in time of war.

EXECUTIVE (in Law). That branch

of the government, which executes the functions of governing the state.

EXECUTOR (in Law). One appointed by a testator to see that his will is executed.

EXECUTRIX. A female executor.

EXEMPLIFICATION. A duplicate of letters patent.

EXERCISE (in Military Tactics). The practice of all military movements.

EXHALATION. A fume or vapour rising from the earth.

EXHIBITION. A public display of whatever is interesting, either as a matter of art, or a natural curiosity.

EXERGUE. In numismatics, the place on a medal or coin around and without the type or figure, which has generally the date or other particular inscription.

EXHUMATION. The act of digging up a body that has been interred.

EXIGENT (in Law). A writ or part of the process of outlawry.

EXILE (in Law). A person sent into some place distant from his native country, under a penalty not to return within a certain period.

EXIT (in Theatricals). Going off the stage.

EX OFFICIO. By virtue of one's office, as, in England, ex officio informations, prosecutions commenced by the king's attorney general by virtue of his office, without applying to the court for permission.

EXORCIST. One, who by prayers and incantations, professes to cast out evil spirits.

EXORDIUM. The commencement of a speech, serving to prepare the audience.

EXOTIC PLANTS. Plants of foreign growth, which in this climate require a hothouse and every kind of nurture.

EXPANSION. An increase of the bulk of any body by a power acting within, particularly by the action of heat

EX PARTE (in Law). On one side, as exparte statements, a partial statement, or that which is made on one side only.

EXPECTATION. In the doctrine of chances, is applied to any contingent event, upon the happening of which, some benefit is expected.

EXPECTORANTS Medicines which promote expectoration, or a discharge of mucus from the breast.

EXPERIMENT. A trial of the results of certain applications and motions of natural bodies, in order to discover something of their laws, nature, &c.

EXPERIMENTAL PHILOSOPHY. That philosophy, which deduces the laws of nature, from sensible experiments and observations.

EXPERIMENTUM CRUCIS A leading or decisive experiment.

EXPIRATION. A breathing out air from the lungs.

EXPLOSION. A sudden and violent expansion of an aerial or elastic fluid, accompanied with a noise.

EXPONENT (in Algebra). The number or quantity expressing the degree or elevation of a power, as, in $x^2$, 2 is the exponent of the square number.

EXPORTS (in Commerce). Goods exported or sent out of one's own country to a foreign land.

EXPOSITOR. One who explains the writings of others, particularly one who professes to expound the Scriptures.

EX POST FACTO. Literally, from something done afterwards, as an ex post facto law, a law which operates upon a subject not liable to it at the time the law was made.

EXPRESS. A messenger sent with direct and specific instructions.

EXPRESSED OILS. Oils obtained from bodies by pressing.

EXPRESSION (in Chemistry or Pharmacy). The pressing of the oils or juices of vegetables.

EXPRESSION (in Painting). The distinct exhibition of character or of sentiment, in the characters represented.

EXTEMPORE, or EXTEMPORANEOUSLY Without preparation or premeditation.

EXTENSION. One of the essential properties of a body, to occupy some space

EXTENT (in Law). A writ of execution for valuing lands and tenements.

EXTENT (in Music). The compass of a voice or instrument.

EXTENT IN AID. In England, a seizure made by the crown, when a public accountant becomes a defaulter.

EXTINGUISHMENT (in Law). The annihilation of an estate, &c. by means of its being merged or consolidated with another.

EXTIRPATION (in Surgery). The complete removal or destruction of any part, either by excision or by means of caustics.

EXTORTION The unlawful act of an officer who, by colour of his office, takes money or any other thing when none at all is due.

EXTRACT (in Chemistry). The purer parts of any substance extracted from its grosser parts by means of decoction, and formerly also by distillation, until they were of the consistence of paste or honey

EXTRACT (in Literature). Some select matter or sentences taken from a book.

EXTRACT (In Law). A draught or copy of a writing.

EXTRACTION (in Surgery). The drawing any foreign matter out of the body.

EXTRACTION (in Arithmetic). The finding out the true root of any number or quantity.

EXTRACTION (in Genealogy). The line, stem, or branch of a family from which a person is descended

EXTRACTOR (in Surgery). An instrument for drawing the stone from the body.

EXTRAORDINARY. Out of the common course; as an Extraordinary Courier, one sent on an urgent occasion; Extraordinary Gazette, one published to announce some particular event.

EXTRAVASATION. The state of the fluids when they are out of their proper vessels, as when by the breaking of a blood vessel in the dura mater, the blood is effused in the ventricles of the brain.

EXTREME UNCTION. A solemn anointing of any person in the Romish church, who is at the point of death.

EXUDATION. The emitting of moisture through the pores, as the exudation of gums through the bark of trees

EXUVIÆ. The slough or cast off coverings of animals, particularly those of the snake kind.

EYE (in Anatomy). The organ of sight, whereby visible objects are represented to the mind. The external parts of the eye are the eyebrows, eyelashes, eyelids, the lachrymal ducts, &c.; the internal parts of the eye, which compose the ball or globe of the eye, consist of membranes, chambers and humours.

EYE. A term applied to different objects from some supposed resemblance to the natural eye.

EYE (in Architecture). The aperture at the top of a dome, and to the centre of a volute.

EYE (in Botany). That part of a potatoe and other things where the bud puts forth.

EYE (in Printing). The graving in relievo, on the top or face of the letter.

EYEGLASS. A glass put close to the eye, for the purpose of bringing objects nearer.

## F

F, the sixth letter in the alphabet, stood as a numeral for 40, and with a dash over it, for 40,000; it now stands for one of the Dominical or Sunday letters, and also, in Music, for the fourth note in the diatonic scale.

FA (in Music) The fourth note of the modern scale, which is either flat or sharp; the flat is marked thus ♭, and the sharp thus ♯.

FABLE. A tale or fictitious narration intended to instruct or convey a moral, as the Fables of Æsop; also the principal part of an epic or dramatic piece.

FABRIC (in Commerce). The same as manufacture; lace of the fabric of Brussels, &c.

FACADE. The front or the principal side of a building.

FACE (in Anatomy). The lower and anterior part of the skull; in general, the fore part of any thing, as the face of a stone, anvil, &c.

FACE (in Fortification). The face of a bastion, the most advanced part towards the field.

FACE (in Gunnery). The metal at the extremity of the muzzle of a gun.

FACE (in Military Tactics). The side of a battalion formed into a square.

FACET. The small side of a diamond

FAC SIMILE. The copy of a person's writing, as of a letter in imitation of his own handwriting.

FACTITIOUS. Made by art, as factitious cinnabar; in distinction from that procured naturally

FACTOR (in Commerce). An agent commissioned by merchants to buy or sell goods on their account.

FACTORS (in Arithmetic). The two numbers that are multiplied together.

FACTORY. A place in a distant country, where factors reside for purposes of trade; also the trades themselves collectively.

FACULÆ (in Astronomy). Bright spots on the surface of the sun.

FACULTIES, Court of. In England, a court under the archbishop of Canterbury for granting faculties or privileges.

FACULTIES (in the Universities). The divisions under which the arts and sciences are classed, and degrees granted. These are for the most part four, as 1. Arts, including Humanity and Philosophy· 2. Theology; 3. Physic; and 4. Civil Law.

FACULTY (in Law) A dispensation or privilege.

FACULTY (in Physics). That power by which a living creature moves and acts. This may be either an animal, or corporeal

faculty belonging to the body, or a rational faculty belonging to the mind.

FÆCES. The dregs or gross substances which settle after fermentation.

FÆCULÆ. Small dregs or lees

FAGG. A sea term, for the end of the strands which do not go through the tops when a cable or rope is closed.

FAINTS (in Chemistry). The weak spirituous liquor that runs off from the still after the proof spirit is taken away.

FAIR. A larger kind of market, held once, twice, or oftener in the year, according to the charter granted to any particular place.

FAIR MAID OF FRANCE. A plant of the ranunculus tribe, bearing an exceedingly white flower

FAIRY. A kind of genii or imaginary spirits of a diminutive size, and fabled to haunt houses and revel in meadows during night, &c.

FAIRY CIRCLE or RING. A phenomenon frequently seen in the fields, consisting of a round bare path with grass in the middle, formerly ascribed to the dances of the fairies. It is supposed by some to be a fungus which eats away the grass in this circular form, or by others the effect of lightning.

FAIRY TALES. Eastern tales of the wonderful proceedings wrought by fairies.

FAKIR. A sort of dervises or Mahometan monks. Religious devotees of Hindostan

FALCHION A kind of sword turned up somewhat like a hook.

FALCON. A bird of the hawk tribe, about the size of a raven, and capable of being trained for sport, in which it was formerly much employed It is usually represented in coats of arms with bells on its legs, and also decorated with a hood, virols, rings, &c. The falcon gentil is here represented

FALCONER. One who looks after, and trains hawks.

FALL (in Physics). The descent or natural motion of bodies towards the earth

FALL (in Military Affairs). The surrender of a town; among Seamen, the loose end of a tackle.

FALL (in Husbandry). The descent of ground which serves to carry off the water.

FALLACY. A logical artifice, or an argument framed so as to deceive; a sophism

FALLING SICKNESS. See EPILEPSY.

FALLOW. Land laid up and left without a crop for a year, in order to give the soil time to recover itself; the act of so doing is called fallowing.

FALLOW-DEER. The common deer seen in the parks of England. The Virginia deer of America.

FALLOW-FINCH A bird, otherwise named Wheat Ear.

FALSE. An epithet used in Law, as False Imprisonment, the trespass of imprisoning a man without lawful cause; in Mineralogy, as False Diamond, a diamond counterfeited with glass.

FALSE FLOWER (in Botany). A flower which does not seem to produce any fruit.

FALSE ROOF (in Carpentry). That part of a house which is between the roof and the covering.

FALSIFYING (in Law). Proving a thing to be false, as falsifying records

FAMILY (in Law). All living in one house under one head; also the kindred or lineage of a person.

FAMILY (in Natural History). Any order of animals, or other natural production of the same class.

FAN. A sort of basket in which the corn is winnowed, to separate the chaff from it.

FANDANGO. A dance much used in Spain

FAR. An abbreviation for farthing.

FARCE. A sort of mock comedy, in which there is much grimace and buffoonery.

FARCY. A sort of leprosy in horses.

FARE. Money paid for the passage of a person in any vehicle, either by land or by water.

FARINA. The pulverulent and glutinous part of wheat and other seeds, obtained by grinding

FARM. In England, part of an estate in land employed in husbandry, and let to a tenant on condition of paying rent to the owner thereof. In the United States, the term is applied to any estate in land whether rented or cultivated by the proprietor.

FARMER. Properly, one who occupies and cultivates a farm or hired ground; a cultivator of ground generally. In England the farmers are not proprietors of the lands which usually belong to rich persons, who let them to tenants.

FARMING. The cultivating of land for the purposes of profit.

FARRAGO. A mixture of several sorts of seed sown in the same plot of ground.

FARRIER. One who shoes horses, and also cures their diseases. In London, the farriers are one of the oldest of the city companies. As farriers worked most in iron, they were originally called ferrers or ferriers, from ferrum, iron

FARRIERY. The art of shoeing and managing a horse altogether, including also the cure of his diseases. On the application of science to this art, it rose in importance and estimation; a college was formed some years ago in England for practitioners in animal medicine and surgery, which, in imitation of the French, was called the Veterinary College, and the art itself the Veterinary Art

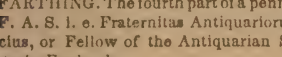
FARTHING. The fourth part of a penny.

F. A. S. i. e. Fraternitas Antiquariorum Socius, or Fellow of the Antiquarian Society in England.

FASCES. Bundles of rods bound round the helves of hatchets, which were carried before the Roman consuls as insignia of their office.

FASCETS. Irons used in a glass manufactory.

FASCINES (in Fortification). Small branches of trees bound up in bundles for filling ditches, &c



FAST. An abstinence from food on a religious account.

FASTI. The Roman calendar, in which were set down the feasts, games, ceremonies, &c.

FAT. A concrete oily matter contained in the cellular membrane of animals.

FATES. The destinies; according to the poets, the three fatal sisters, Clotho, Lachesis, and Atropos, who determined the duration of life.

FATHER LASHER. A voracious fish inhabiting the shores of Greenland and Newfoundland.

FATHER LONG-LEGS. A harmless insect, with a small body and exceedingly long legs.

FATHOM A long measure of six feet.

FAUNS. Rural deities having horns on their heads, with pointed ears and tails

FAWN. A young deer; a buck or doe of the first year.

F. E. An abbreviation for Flemish Ells.

FEASTS. Anniversary times of feasting and thanksgiving, such as Christmas and Easter, &c. Some feasts are moveable that is, not confined to any particular day, as Easter and all that are governed by it; others, as Christmas, &c. are immoveable that is, fixed to a day

FEATHER. That which forms the covering of birds The constituent parts of feathers are, for the most part, albumen with a little gelatin

FEATHER (in the Manege). A row of hair turned back and raised on the neck of a horse.

FEATHER-EDGED BOARDS. Boards having one edge thinner than the other

FEATHERS. The finest kind of feathers, as Ostrich Feathers, which are used for ornament. The Prince's Feathers are those which adorn the cognizance of the Prince of Wales.

FEB. An abbreviation for February.

FEBRIFUGE. A sort of medicines which abate the violence of fever

FEDERAL. United by a compact, as Federal States

FEDERAL CONSTITUTION. The constitution of the United States in which the several states are united, or federated under one general government.

FEE. An estate of inheritance, or the interest which a man has in land or some other immoveable: this is called a fee simple when it is unconditional, and a fee tail, when limited to certain heirs according to the will of the first donor

FEED. What is given to a horse at one time, either of hay or corn.

FEEDER. A sort of drain which carries the water into other drains.

FEELERS. Organs fixed to the mouth of insects, which are vulgarly called horns: the feelers are, however, smaller than the antennæ, or horns, in some insects.

FEELING. One of the five senses, which acts by means of the nerves, that are distributed in all parts of the body.

FEES. Perquisites allowed to officers in the administration of justice.

FEIGNED ACTION. An action which is brought simply to try the merits of a question.

FEINT (in Military Tactics). A mock attack, made to conceal the true one.

FELLOES. The pieces of wood which form the circumference or circular part of the wheel.

FELSPAR. A mineral occurring in crystals and crystalline masses, which, next to quartz, is the most abundant in nature. It is somewhat vitreous in lustre, and breaks rather easily in two directions with smooth surfaces. Its color is usually white or flesh-red, sometimes bluish or greenish. It consists of silica, alumina, and potash, and is a constituent part of granite, gneiss, mica slate, porphyry, and most volcanic rocks.

FELLAHS. The peasants or laboring classes in Egypt.

FELONY. In common law, any crime which incurs the forfeiture of lands or goods, and to which capital or other punishment is superadded, according to the degree of guilt.

FELT-GRAIN. The grain of cut timber that runs transversely to the annular rings or plates.

FELTING. The process of working felt into hats.

FELTING (in Carpentry). The splitting of timber by the felt-grain.

FELUCCA. A light open vessel with six oars, much used in the Mediterranean. Its helm may be used either at the head or the stern.

FEMALE FLOWER. A flower having pistils or stigmas without stamens.

FEMALE SCREW. A screw, the spiral thread of which is cut in the cavity of the cylinder.

FEME COVERT (in Law). A married woman.

FEME SOLE. A single woman.

FEMININE GENDER (in Grammar). Nouns which, by their ending, denote the female sex.

FEN. A place overflowed with water, and abounding in bogs.

FENCE (in Husbandry). A hedge, wall, or ditch, &c. made to part off a field or garden.

FENCING. The art of using the sword, either in attack or defence. In the exercise of this art, foils or thin swords are used, which, being blunted at the points and bending readily, are perfectly harmless.

FENDER. An iron plate to keep the fire and ashes from the room.

FENDERS. A sea term for pieces of old cable, &c. hung over the sides of a ship to keep off other ships

FENNEC. An animal found in Africa resembling a dog.

FEOFFEE (in Law): He to whom a feoffment is made.

FEOFFMENT (in Law). The gift or grant of any hereditament to another in fee simple.

FEOFFOR. He who makes a feoffment.

FERÆ. The third order of animals in the Linnæan system, including such as have from six to ten conic fore teeth and one tusk, as the seal, the dog, the wolf, the hyæna, the jackal, the lynx, the tiger, the panther, &c.

FERMENT. Any substance which has the property of causing fermentation in another body, as the acid in leaven.

FERMENTATION. The intestine commotion in the small insensible particles of a mixed body, usually caused by the operation of acid matter. When animal liquids alone, or mixed with vegetable, become sour, this is called acetous fermentation, and the product is, generally speaking, acetic acid or vinegar. When saccharine matter, or the sweet juices of fruits, undergo this intestine change, it is called vinous fermentation, and the result is an intoxicating liquor, as wine or beer, &c.

FERN. A weed, very common in dry and barren places, which is very injurious to the land in which it has once taken root.

FERRET. An animal of the weasel tribe, with red eyes and a long snout; it is much used in Europe, in catching rabbits and rats

FERRUGINOUS. An epithet for any thing partaking of iron, or containing any particles of that metal.

FERRY. A vessel employed for conveying persons and goods over a narrow piece of water.

FERRYMAN. One who keeps a ferry

FERULA. An instrument of correction in schools, with which boys are beaten on the hand.

FERULA (in Botany). A plant, otherwise called Fennel Giant, which is an herbaceous perennial

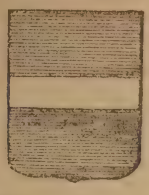
FESCUE-GRASS. A sort of grass cultivated as food for cattle.

FESTOON. An ornament of carved wood, in manner of wreaths or garlands hanging down.

FETLOCK. A tuft of hair that grows

behind the pastern joint in the feet of many horses.

FESSE (in Heraldry). One of the honourable ordinaries, which occupies the third part and the middle of the field.



FETTERS (in Law). A sort of irons put on the legs of malefactors.

FEUD. In England, the right which the vassal or tenant had in lands and other immoveable things of his lord's, to use the same and take the profits thereof, rendering unto his lord such duties and services as belonged to military tenure, the property of the soil, &c. always remaining to the ord. The laws respecting these feuds, which are comprehended under the name of the Feudal System, regulated all the principles of landed property in that kingdom until the reign of Charles II.; and vestiges of this system are still to be seen in the modern tenures, particularly in copyholds.

FEVER. A disease characterized by an increase of heat, an accelerated pulse, a foul tongue, and an impaired state of several functions.

FIAT, i. e. LET IT BE DONE. In Eng. A short order or warrant of some judge, for making out and allowing certain processes.

FIBRE (in Anatomy). A simple filament, serving to form other parts, as the muscles, nerves, &c.

FIBRE (in Botany). Threads or hair-like strings in plants, roots, &c.; the first constituent parts of bodies.

FIBRIL. A small fibre.

FIBRINA (in Chemistry). That substance which constitutes the fibrous part of muscles. It is of a white colour, without taste or smell, and not soluble in alcohol or water.

FIBROLITE. A mineral consisting of alumina, silica, and iron.

FIBULA (in Anatomy). The lesser and outer bone of the leg.

FICTION (in Law). A supposition that a thing is true, so that it may have the effect of truth as far as is consistent with equity.

FIELD. Arable land, or any plot of ground parted off for cultivation.

FIELD (in Heraldry). The whole surface of the shield or escutcheon.

FIELD (in Military Tactics). The ground chosen for any battle.

FIELD (in Painting). The ground or blank space on which any thing may be drawn.

FIELD-BED (in Military Affairs). A folding bed used by officers in their tents

FIELDFARE. A migratory bird of the thrush tribe, that visits England about Michaelmas and leaves it in March.

FIELD-OFFICERS. Those who command a whole regiment.

FIELD-PIECE. A sort of cannons, consisting of eighteen-pounders and less.

FIELD-WORKS (in Fortification). Works thrown up by an army in besieging a fortress.

FIERI FACIAS. A writ commanding a sheriff to levy the debt or damages on the goods of one, against whom judgment has been had in an action of debt.

FIFE. A shrill wind instrument of the martial kind, consisting of a short narrow tube, with holes disposed along the side for the regulation of its tones.

FIFER. One who plays on the fife in the army.

FIG. A tree, with an upright stem branching fifteen or twenty feet high, with large palmated or hand-shaped leaves. It flourishes in warm climates, and bears a fruit as represented underneath, which, when dried, is remarkable for its luscious sweetness.

FIG (in Farriery). A kind of wart on the flesh of a horse, that is often filled with foul humours.

FIGHTS. Waste clothes hung round a ship in battle, to prevent the men from being seen.

FIGURE (in Painting). The lines and colours which form the representation of an object.

FIGURE (in Geometry). A space terminated on all parts by lines curved or straight.

FIGURE (in Arithmetic). One of the nine digits, as 1, 2, 3, &c.

FIGURE (in Grammar and Rhetoric) A word or form of expression which de

viates from the common and natural meaning.

FILACER In England, an officer of the Court of Common Pleas who files the writs, whereon he makes out process.

FILAGREE, or FILIGRANE. An ornamental work in which flowers or other figures are wrought with gold or silver threads.

FILAMENT (in Botany) The thread-like part of the stamen, which supports the anther.

FILBERT. A sort of nut tree cultivated in gardens, the fruit of which is larger and finer than the common wild nut.

FILE (in Trade and Law). A wire or thread on which loose papers are filed up together.

FILE (among Mechanics). A tool of steel, with which iron or any other metal is polished. Files are cut in little furrows in a certain direction, and of a certain depth, according to the grain or touch required. Files are either cut by the hand with a chisel and mallet, or by means of a machine; but the latter mode is not so good.

FILE (in Military Tactics). A straight line or row formed by soldiers.

FILICES. An order of plants of the class cryptogamia in the Linnæan system, including the fern, horse-tail, adder's tongue, maiden-hair, spleenwort, polypody, &c.

FILLET (in Heraldry). A kind of bordure.

FILLET (in Architecture). A little member that connects the other members.

FILLET (in Painting). A little ringlet of leaf gold.

FILM (in Surgery). A thin skin that covers the eye.

FILM (in Botany). The thin woody skin that separates the seed in the pod.

FILTER (in Chemistry). A strainer through which any fluid is passed so as to separate the grosser particles from it.

FILTERING PAPER. Paper without size, that may be used in filtering.

FILTERING-STONE. A sort of stone or basin which is sometimes used for purifying water. It is artificial as well as natural, and has been variously constructed to answer the purpose.

FIN. The membrane in fishes by which they perform their movements in the water.

FINAL. The last or concluding. Final letters are those which are used only at the end of words, as in the Hebrew and other oriental languages.

FINAL (in Music) The last sound of a verse in a chant.

FINALE. The last piece in a concert, &c

FINANCES (in Political Economy). The treasures or revenue of the country.

FINANCIER. An officer who manages the finances of the country.

FINE (in Law). A penalty or amends made in money for an offence; also money paid for the renewal of a lease, and a conveyance of lands or tenements in order to cut off all controversies.

FINE-DRAWING. Sewing up the rents in woollen cloths so finely that they cannot be seen.

FINERS OF GOLD AND SILVER. Those who separate the metals from coarser ores.

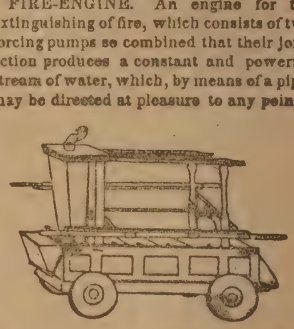
FINERY. The furnace in which metals are refined, that is, hammered and fashioned into what is called a bloom or square bar.

FIN-FISH. A smaller sort of whale.

FIR, or FIR TREE. A tree valuable for the timber, pitch, tar, &c. which it yields in abundance. The sorts most esteemed in England, are the Scotch fir, Norway fir, Spruce fir, and Canada fir. In the United States, the white and yellow pine, are the most valued.

FIRE (in Chemistry). Was formerly reckoned one of the four elements; but it is now a matter of dispute whether it be a distinct substance, or whether it arises solely from the intestine and violent motion of the parts of bodies.

FIRE-ENGINE. An engine for the extinguishing of fire, which consists of two forcing pumps so combined that their joint action produces a constant and powerful stream of water, which, by means of a pipe, may be directed at pleasure to any point.



FIREBALLS. Luminous bodies usually appearing at a great height.

FIREBRAND. A piece of burning wood taken out of the fire

FIRE-DAMPS. See DAMPS.

FIRE-FLY. A species of flies common in Guiana, having on each side of the head, a globular luminous body, that shines like a star. They live in rotten trees in the day, and always appear at night.

FIRE-MAN One who is employed in extinguishing fires.

FIRE-SHIP. A ship filled with combustibles, to set fire to the vessels of the enemy.

FIRE-WORKS. Compositions of sulphur, saltpetre, and charcoal, which exhibit a handsome appearance when fired off.

FIRKIN. An English measure of capacity, containing nine gallons of beer.

FIRMAN. A passport granted in Turkey and India for the liberty of trade.

FIRST-FRUITS (in England.) The profits of every spiritual living for one year, given to the king.

FIRSTLING. The young of cattle which are first brought forth.

FISH, or FISHES (in Natural History). Water animals in general; one class of the animal kingdom in the Linnæan system.

FISH, or Royal Fish (in Law). The whale and sturgeon, so denominated in England, because the king is entitled to them whenever they are thrown on shore, or caught near the coasts.

FISH (among Mariners). A machine employed to hoist and draw up the flooks of ships' anchors towards the top of the bow.

FISHERY. The place where fish are caught for the purposes of trade.

FISH-GIG. An instrument for striking fish at sea.

FISHING-FLY A bait used for catching fish.

FISHING-HOOK An instrument of steel wire, fitted for catching and retaining fish.

FISHING-LINE. A line of twisted hair fixed to a rod called the fishing-rod, and having at one end the fishing-hook.

FISHMONGER. A dealer in fish. There were formerly two companies of fishmongers in London, namely, the stock-fishmongers and salt-fishmongers, which were united in 1536.

FISTULA. A long and sinuous ulcer.

FITCHET. An animal of the weasel or ferret kind.

FIXATION. The making any volatile spirituous body endure the fire.

FIXED AIR. A name formerly given by chemists, to the air which was extricated from lime, magnesia, and alkalies, now commonly called, carbonic acid gas.

FIXED BODIES. Such as neither fire nor any corrosive menstruum, have the power of reducing to their component elements, as ammonia.

FIXED STARS. Such as do not change their positions in respect to one another

FLAG (in Naval or Military Affairs) The colours or ensign of a ship, or of a regiment of land forces. The first flag in Great Britain is the standard, only to be hoisted when the king or queen is on board

FLAG (in Botany). A sort of rush with a large leaf. It is of different kinds, as the common flag, or water iris, that grows in rivers and bears a yellow flower; the corn flag, or gladiole, a bulbous plant; and the sweet flag, a perennial; which two last are cultivated in gardens.

FLAGEOLET. A little flute

FLAG-OFFICER. An officer commanding a squadron.

FLAGON. A large drinking vessel.

FLAG-SHIP. A ship commanded by a flag-officer.

FLAG-STAFF. The staff set on the head of the topgallant mast, on which the flag is placed.

FLAGSTONE. A sort of stone used for smooth pavement.

FLAIL. An instrument used for threshing corn.

FLAME. The most subtle part of fire which is properly the fume or vapour of fire, heated red-hot so as to shine.

FLAMINGO. A sort of bird in Africa and America.

FLANK. The side of an army, or a battalion encamped on the right and left.

FLANK (in Fortification). Any part of a work that defends another work along the outside of its parapet.

FLANNEL. A slight, loose, woollen stuff, woven on a loom with two treadles after the manner of baize. It serves to keep the body warm, because, from its light and spongy texture, it does not admit of a passage for the heat.

FLASK. A measure for holding gunpowder.

FLAT (in Music). A character marked thus ♭, which lowers a note one semitone.

FLAX. A plant, from the fibres of which linen thread is made Common flax, or

represented underneath, is an annual; but the other kinds are perennials.

FLAX EARTH, or Mountain Flax. See Asbestos.

FLEA. A little insect of a deep purple colour, remarkable for its agility in leaping, for which it has three pair of legs. It sucks the blood of larger animals.

FLEAM. An instrument for lancing the gums or bleeding cattle.

FLEECE. A flock of wool, or what comes from a sheep at one shearing.

FLEET. A number of ships together in company or under one commander.

FLEET. A prison in London, where debtors are confined.

FLESH (in Anatomy). The soft and fibrous part of an animal body; also the red part of a muscle.

FLESH (in Botany). The pulpy substance of any fruit or root.

FLEUR DE LIS, or Flower de Luce (in Heraldry). A bearing in the arms of France, and in other coats of arms.

FLINT. A semitransparent and hard stone, which possesses the property of emitting fire when struck.

FLINT (among Gunsmiths). A piece of flint, cut so as to go between the jaws of the cock of a gun.

FLOAT. A raft or number of pieces of timber, fastened together with rafters athwart, to be driven down a river with the tide.

FLOATING BATTERY. Vessels used as batteries to cover troops in landing on an enemy's coast.

FLOCK. A number of sheep in company; also a lock of wool.

FLOETZ. Beds or strata of earth, containing the remains of animal or vegetable substances, &c

FLOOKAN. The name of a slimy kind of earth. In mining, the deviation or shifting of a lode or vein by a cleft, &c.

FLORA. A catalogue or account of flowers or plants; the plants of a particular country. In mythology, the goddess of flowers, in honor of whom the festival Floralia was celebrated.

FLORIN. A British silver coin, the tenth of a pound sterling, and worth about 48 cents, first minted in 1849, and now in general circulation. It was originally made at Florence, and now circulates in many European countries, ranging in value from 38 to 56 cents to two shillings and four pence.

FLOWER. In botany, that part of a plant which contains the organs of fructation. A flower, when complete, is furnished with a calyx, corolla, stamens, and pistils; the stamens carrying the anthers, or male organs of reproduction, and the pistils the stigmas, or female organs, by which the pollen, or impregnating dust, is conveyed into the ovary, or seed-vessel. Flower-stalk is the peduncle of a plant, or the stem which supports the fructification. Flower-head is that mode of inflorescence in which all the flowers are sessile, as in the daisy. In pyrotechnics, a particular kind of firework, which, when ignited, throws out a fountain of vivid florescent-looking sparks.

FLUATES. A kind of salts formed by the combination of fluoric acid with different bases, as the fluate of ammonia.

FLUE. The small winding chimney in a furnace for conveying smoke, air, and heat into a larger chimney; also the down or soft hair of rabbits and feathers.

FLUELLEN. An annual that grows in gardens.

FLUID (in Physiology). A fluid body, or one whose parts yield to the smallest force impressed, and are easily moved among each other. Fluids are either elastic, as the air, or non-elastic, as water mercury, &c.

FLUID (in Anatomy). The fluids of the animal body are the humours and juices, as the blood, chyle, saliva, &c.

FLUIDITY. The state of bodies when their parts are very readily moveable in all directions with respect to each other. It stands directly opposed to solidity or firmness, and is distinguished from liquidity and humidity, inasmuch as the latter imply also wetting and adhering. Melted metals, air, ether, smoke, and flame are fluid but not liquid bodies, their parts being dry and leaving no sense of moisture Solids are converted into fluids by means of heat.

FLUOR SPAR. A species of salt which abounds in nature, and consists of a calcareous earth in combination with fluoric

acid. It is called fluor because it melts readily; it is called spar because it has a sparry form and fracture; and it is also called vitreous spar because it has the appearance of glass.

FLUORIC ACID. A gaseous substance procured from fluor spar, which is of a corroding nature, and will dissolve glass, for which reason it has been used for etching on glass. This acid gas readily combines with water; and when dropped in, a hissing noise is produced with much heat.

FLUTE. A wind instrument, and the simplest of its kind, with stops for the fingers.

FLUTES. The hollow channels found along the surface of a column.

FLUX (in Physiology). That motion of the water by which it rises

FLUX (in Chemistry). Any substance or mixture added to assist the fusion of minerals and metals. In assaying, alkalies are used as fluxes, which render the earthy mixtures fusible by connecting them with glass.

FLUXIONS. That branch of algebra which treats of the velocities with which the fluents or flowing quantities increase or decrease. The variable or flowing quantities are represented by the letters $v$, $w$, $x$, $y$, $z$; the invariable quantities, by the letters $a$, $b$, $c$, $d$, &c. The fluxion is represented by a dot thus $\dot{y}$, $\dot{z}$.

FLY (in Natural History). A small winged insect, that is always flying about in houses.

FLY (among Mechanics). That part of a jack which puts the rest of the machine in motion.

FLY (among Mariners). That part of a compass on which the thirty-two points are described.

FLY (among Carpenters). Flies or flyers are the series of steps which go straight forward without winding.

FLY-BOAT. A large vessel with a broad bow, used in the coasting trade.

FLY-BLOW. The deposit of the eggs, maggots, or nymphæ of flies in meat.

FLY-CATCHER. A sort of bird inhabiting Asia, Africa, and America, so called because it lives upon flies. The king bird is a well known variety in this country.

FLYING BRIDGE. See BRIDGE.

FLYING-FISH. A fish inhabiting the European and American seas, which, by the help of its long pectoral fins, is enabled to raise itself out of the water and to fly a short distance when pursued by other fish.

FLYING SQUIRREL. A beautiful American Squirrel, which by the use of membranes attached to its legs sails from the tops of trees to a great distance.

FLYING DRAGON. A four-footed reptile of the lizard tribe, inhabiting Africa and India, which has a lateral membrane serving as a wing.

FLY-ORCHIS. A plant, so called from the resemblance it bears in its figure to a fly.

FLY-TRAP, or VENUS'S FLY-TRAP. A sensitive plant, the leaves of which consist of two lobes, that close when they are irritated within, and consequently entrap any insect that lights upon them.

FOAL. The young of a horse, or ass.

FOCUS (in Optics). The point of convergence or concourse, where all the rays meet after passing through a convex lens.

FOCUS (in Geometry and Conic Sections). A certain point in the parabola and ellipses, &c. where the rays reflected from all parts of these curves concur

FODDER. Dry food for cattle.

FODDER (in England). The prerogative of the king formerly, to be provided with fodder for his horses in any warlike expedition.

FOG, or MIST. A meteor consisting of condensed vapours floating near the surface of the earth.

FOIL (in Fencing). An instrument without a point, to fence with by way of exercise.

FOIL (among Glass-grinders). A sheet of tin laid on the back of a looking-glass, to make it reflect.

FOIL (among Jewellers). A thin leaf of metal placed under a precious stone, to increase its brilliancy.

FOLD. An enclosed place in which sheep are confined.

FOLIAGE. A cluster or assemblage of the leaves of trees.

FOLIAGE (in Architecture). Ornaments representing leaves, used in cornices, &c.

FOLIATING. Spreading the plates of glass over with the foil, in order to make them reflect.

FOLIO. The full size of paper as it comes from the manufacturer; also books printed on paper of that size.

FOLIO (in Merchants' Accounts). The page, including the rigat and left hand page, in a merchant's ledger, which are numbered by the same figure, so that they may correspond.

FOMENTATION. The bathing any part of the body with a decoction of herbs, &c. A similar application with bags of herbs and other ingredients, is called a dry fomentation.

FOOT. A measure of length consisting of twelve inches.

FOOT (in Poetry). A certain number of syllables which serve for measuring the verse.

FOOT (in Military Tactics) Soldiers who serve on foot.

FORAGE. Provender for horses in an army.

FORCE (in Physiology). Whatever is or may be made, the primary cause of motion in bodies.

FORCE (in Law). Unlawful violence

FORCE (in Military Affairs). Any body of men that may be employed in action.

FORCEPS. A surgeon's tongs, pincers, &c.

FORCER, or FORCING-PUMP. A pump with a forcer or piston without a valve.

FORCING (among Gardeners). A method of obtaining fruits and flowers before their season, by the application of heat.

FORCING (in Commerce). The fining down wines so as to render them fit for immediate use.

FORE. A sea term for near the stem; as 'fore and aft,' that is, from stem to stern.

FORECASTLE. A short deck in the fore part of the ship.

FORECLOSED (in Law). Excluded or barred the equity of redemption on mortgages, &c.

FOREIGN ATTACHMENT (in Law). an attachment of foreigners' goods.

FORENSIC. Belonging to the bar or courts of law.

FORESHORTENING (in Painting). The making a head or face in a drawing appear shorter before.

FOREST. In England, a large wood privileged to hold the king's game of all kinds.

FORESTALLING. The buying or bargaining for corn or other merchandise, before it comes into the market.

FORESTER. In England, the keeper of a forest.

FORFEITURE (in Law). The loss of goods, lands, or employments, &c. for neglecting to do one's duty, or for some crime committed

FORGE A furnace, in which smiths heat their metals red-hot, or in which the ore taken out of the mine is melted down

FORGERY (in Law). The fraudulenmaking or altering any record, deed, or writing, &c. to the prejudice of another man's right, particularly the counterfeiting the signature of another with intent to defraud.

FORMATION. In geology, any assemblage of rocks, alluvial deposits, or sedimentary strata referred to a common origin or period. The term properly signifies a series of rocks, usually passing gradually into each other, and the whole being considered as belonging to a certain period of geological time. A geological formation may consist of rocks entirely dissimilar, as the coal, shale, ironstone, and sandstone of the coal formation; or the chalk, flints, and sands of the chalk formation.

FORM (among Printers) The chase or frame filled with type or letter the size and form of a page, made ready for the press. This form will be quarto if the sheet consist of 8 pages, octavo if it consist of 16 pages, and duodecimo if it consist of 24 pages

FORMA PAUPERIS, i. e. IN THE FORM OF A PAUPER. In England, a form in which any one may sue who swears that he is not worth five pounds, and brings a certificate from some lawyer that he has just cause of suit. In that case he has counsel assigned, and is released from costs of suit, &c.

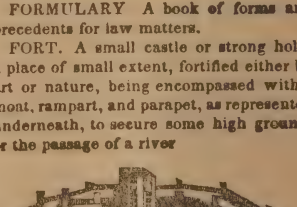
FORMIC ACID. The acid of ants, which is obtained chiefly from the red ant.

FORMULA (in Mathematics). A general theorem or literal expression, for resolving any part of a problem.

FORMULA (in Theology). A profession of faith.

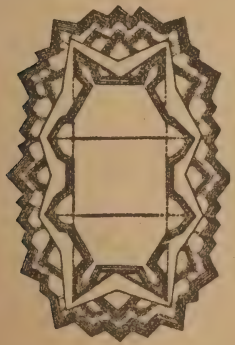
FORMULARY A book of forms and precedents for law matters.

FORT. A small castle or strong hold, a place of small extent, fortified either by art or nature, being encompassed with a mont, rampart, and parapet, as represented underneath, to secure some high ground, or the passage of a river



FORTIFICATION. The science of military architecture, which teaches the best mode of putting a city town, or any other

place, into a state of defence by making works around it. A fortification is either regular or irregular: a regular fortification is built in a regular polygon, as in the subjoined figure; an irregular fortification is where the sides and angles are not uniform. A temporary fortification is that which is raised for any particular emergency, as fieldworks, &c. This is distinguished from a durable fortification, which serves as a permanent defence of a place. A defensive fortification is that by which a town is defended in case of a siege, in distinction from an offensive fortification, which is raised by besiegers for the attack of a place. The works of a place are those about the place, in distinction from the outworks, which are constructed before the body of the place. The principal works belonging to a fortification are, the ditch or trench made round each work; the rampart, or elevation of earth, raised along the faces of any work, to cover the inner part; the parapet, or that part of a rampart which serves to cover the troops planted there; the bastion, that part of the inner enclosure of a fortification making an angle towards the field; the counterscarp, the slope of the ditch facing the body of the place; the covert way, the space extending round the counterscarp; the glacis, the part beyond the covert way, to which it serves as a parapet; the curtain, the front of a wall between two bastions; the flank, any part of a work which defends another; the gorge, that part next to the body of the place where there is no rampart: the epaule, the shoulder of the bastion; besides the barriers, palisades, portcullis, place of arms, &c



FORTIORI, or A FORTIORI. A term used in reasoning, for any conclusion or inference that is much stronger than an other.

FORUM. A public place in Rome, where causes were tried and business transacted.

FOSS (in Fortification). A hollow ditch, commonly full of water, lying between the scarp and the counterscarp.

FOSSAN. An animal of the weasel kind, found in the Asiatic islands, about the size of the ferret.

FOSSILS. All manner of things dug out of the earth, whether they be native fossils growing in and of the earth, as metals, stones, salts, earths, and other minerals; or whether they be foreign substances, as the exuviæ of sea and land animals namely, shells, bones, teeth, &c.; or whether they be vegetables, as leaves, wood, &c. which have lain long buried in the earth.

FOUL. A sea term for the running of one ship against another.

FOUNDATION (in Architecture). That part of a building which is under ground.

FOUNDATION (in Law). A donation in money or lands for the maintenance and support of some community, as an hospital, a school, &c.

FOUNDER (in Law). One who founds and endows a church, school, college, &c.

FOUNDER (in Trade). One who casts metals in various forms, as gun-founders, bell-founders, &c. The company of founders was incorporated in London, in 1614

FOUNDRY. The art of casting metals in various forms; also the place where this business is done. Small works are cast in sand, which, being duly prepared, is put into a wooden frame; then wooden or metal models of what is intended to be cast are put into the sand so as to leave their impression, and along the middle of the mould is laid a small brass cylinder to form a chief canal for the metal to run through, from which canal run others extending to each model or pattern placed in the frame. When the moulds are fully prepared, the fused metal is poured out of the crucible into the chief canal, and thence conveyed to each pattern. After the whole has been set to cool, the cast work is taken out of the sand. The mould for very large articles is made of wet tempered loam built up by degrees in a pit, into which the melted metal is made to run along a channel on the ground to the mould. The composition used in casting bells is termed bell metal.

FOUNT, or FONT A set or certain quantity of letters cast at one time by a letter-founder for the use of a printer

FOUGADE, or FOUGASS. In the military art, a little mine, dug to defend or destroy a fortification by its explosion.

FOULARD. A kind of silk material for ladies' dresses; a silk kerchief.

FOURCHETTE. In ornithology, the bone formed by the junction of the clavicles; commonly called the merry-thought.

FOURNEAU. In military engineering, the chamber of a mine in which the powder is lodged.

FOURTH. In music, an interval enumerated among the discords. The minor or lesser fourth consists of five semitones; but the fourth sharp, or greater, consists of six semitones. In anatomy, fourth pair of nerves is a term applied to the nervi pathetici.

FOUNTAIN. A natural spring of water rising out of the ground; also a stream of water ejected through a pipe by means of a machine contrived for this purpose. Artificial fountains are various in their forms, but they all act on the principle of a pressure, either from a head of water, or arising from the spring and elasticity of the air. When fountains are formed by the pressure of a head of water, or any other fluid of the same kind, with the fountain or jet, then will this spout up nearly to the same height as that head, allowing a little for the resistance of the air, with that of the adjutage, &c. in the fluid rushing through; but when the fountain is produced by any other force than the pressure of a column of the same fluid as itself, it will rise nearly to the altitude of the fluid, whose pressure is equal to the given force that produces the fountain. The subjoined figure represents the circulating fountain, or the fountain of Hero of Alexandria, so called because it was invented by him, in which

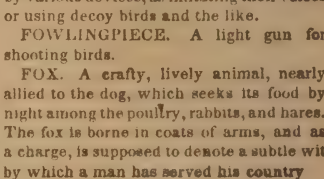
the air, being compressed by a concealed fall of water forms a jet that appears as if it had a perpetual motion, and that the same water which fell from the jet rose again; but, in reality, that water does not come up again, for, running down through a pipe into the bottom box, it drives out the air through an ascending pipe into the box at the top containing water which, being pressed upon, is forced through the spout as long as there is any in it

FOWL. The largest sort of birds, whether domestic or wild, as geese, pheasants, partridges, &c.; also a full grown chicken, or young hen.

FOWLING. The art of taking or killing birds, either by means of snares or nets, or by various devices, as imitating their voices or using decoy birds and the like.

FOWLINGPIECE. A light gun for shooting birds.

FOX. A crafty, lively animal, nearly allied to the dog, which seeks its food by night among the poultry, rabbits, and hares. The fox is borne in coats of arms, and as a charge, is supposed to denote a subtle wit by which a man has served his country



FOXGLOVE. See DIGITALIS.

FOX-TAIL-GRASS. An herbaceous plant.

F. R. S. Fellow of the Royal Society in London.

FRACTURE (in Mineralogy). The breaking of minerals, or the manner in which they break, which is one of their specific characters.

FRACTURE (in Surgery). The breaking of any bone by an external act of violence.

FRÆNUM LINGUÆ (in Anatomy) The ligament under the tongue.

FRAME (with Painters). A kind of square, composed of four long pieces or slips of wood joined together, the intermediate space of which is divided by little strings or threads into a great number of little squares, like the meshes of a net, used in reducing figures from great to small or from small to great.

FRANCHISE. The privilege or right of voting in an election.

FRANK FREE. A term much used in the old English law, as Frank pledge freemen, who used to be pledges or sureties, for the good behaviour of those who were of their community; in modern law, an exemption from paying postage for letters, which is enjoyed by members of parliament in England, and members of Congress to a certain extent.

FRANK. A French coin, worth twenty sols, or about eighteen cents and 3-4.

FRANKINCENSE. An odoriferous, dry, resinous substance, procured from the juniper tree in Turkey and the East Indies.

FREEBOOTER. A soldier that serves for plunder, without pay.

FREEHOLD. That land or tenement which a man holds in fee simple, fee tail, or for term of life.

FREEHOLDERS. Possessors of a freehold estate.

FREEMAN(in Ancient Law). In Eng one free from servitude, as distinguished from a villain or bondsman; also one who enjoys the freedom of a city or borough. A freeman in the United States, is one who has a right to vote

FREE SCHOOL. An endowed school, where children are taught free of expense.

FREESTONE. A sort of stone used in building, that may be cut freely in any manner.

FREIGHT (in Commerce). The sum of money agreed to be paid for the burden of a ship; also the burden itself, or the cargo of a ship.

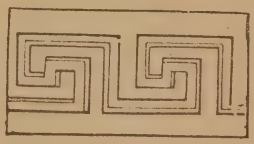
FRENCH HORN. A musical instrument, bent into a circle, and going two or three times round. It grows gradually larger and wider towards the end, and in some horns is nine or ten inches over

FREEZING (in Physiology). The fixing a fluid body into a firm and solid mass by the action of cold. The process of freezing may be artificially produced by means of the air pump, and sometimes by certain freezing mixtures, or compositions of such ingredients as when mixed with other bodies, cause them to congeal; such as snow and common salt, or muriate of ammonia, nitre and water, &c.

FRESCO. A method of painting in relievo on walls, so as to endure the weather; it is performed with water colours on fresh plaster, so that the colours incorporate with the mortar.

FRESHES. A sea term for an impetuous ebb tide increased by heavy rains.

FRET (in Architecture). An ornament consisting of small fillets interlaced, that were used by the ancients on flat members.



FRET (in Music). A kind of stop on some instruments, particularly bass viols and lutes.

FRICTION (in Mechanics). The rubbing of the parts of engines and machines against each other, by which means a great part of their effect is destroyed.

FRIENDLY SOCIETIES. In England, associations chiefly among the lower classes, for affording relief to each other in time of sickness, or to the widows and children at their death.

FRIGATE. A light built ship of war from twenty to fifty guns, fitted for fast sailing.

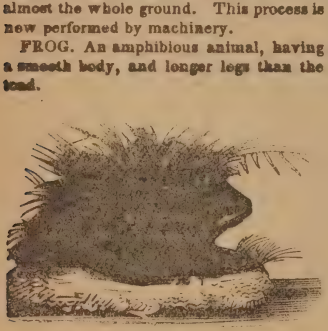
FRIGID ZONES. The two zones or divisions of the earth, comprehended between the poles and the polar circles They are the north frigid zone, at the north pole, and the south frigid zone at the south pole

FRIT, or FRITT (in the Glass Manufacture). The matter or ingredients of which glass is to be made, after they have been calcined or baked in a furnace. It is of different kinds, according to the quality of the glass. Crystal frit, for the best kind, is made with salt of pulverine and sand. The ordinary or common glass is made of the bare ashes of pulverine, or barilla, without extracting the salt from them; this is the second kind of frit. The third kind of frit, for green glass, is made of common ashes, without any preparation.

FRITH (in Geography). An arm of the sea, as the Frith of Forth, or of Edinburgh, the Frith of Clyde, &c.

FRIZING CLOTH. A process in the woollen manufacture, of forming the nap of cloth or stuff into a number of little hard burrs or prominences, so as to cover almost the whole ground. This process is now performed by machinery.

FROG. An amphibious animal, having a smooth body, and longer legs than the toad.



FROG (in Farriery). The hard projecting substance in the hollow of a horse's foot.

FROG-FISH, or FISHING FROG. A kind of fish resembling a frog in the tadpole state, that puts forth its slender horns and entices the little fish to itself, in order to seize them.

FRONT. The principal face or side of a building.

FRONTIER. The boundary of a kingdom, which separates it from another kingdom on the land side.

FRONTISPIECE. The ornament or picture which faces the title page in a book.

FRONTLET. A band worn on the forehead.

FRUCTIFICATION (in Botany). The temporary part of vegetables, appropriated to their propagation, consisting of the flower and the fruit.

FRUIT (in Botany). That which succeeds the flower; it may either be seed only, or it may be an esculent pulpy substance, as the apple or the pear; or it may be hard, like the nut, pea, &c.

FRUITERER. One who deals in fruit The company of fruiterers in London, was incorporated in 1604.

FRUSH. The tender part of a horse's heel, next the hoof.

FRUSTUM (in Mathematics). A part of some solid body separated from the rest.

FRUSTUM OF A CONE. The part of a cone that remains when the top is cut off by a plane parallel to the base; it is otherwise called a truncated cone.

FRUSTUM of a GLOBE or SPHERE. Any part of it cut off by a plane.

F. S. A. An abbreviation for Fellow of the Society of Arts.

FUCI. A genus of plants in the Linnæan system, comprehending most of those which are commonly called seaweeds, from which, when burnt, an impure alkali is procured called kelp.

FUCUS. The name given by the ancients to a sea plant, from which a dye was procured, for dyeing woollen and linen cloths of that colour.

FUGITIVE PIECES. Little pieces of composition of temporary interest.

FUGITIVE'S GOODS (in Law). The goods of one who flies upon felony.

FUGUE (in Music). A species of composition, in which the different parts follow each other, each repeating in order what the first had performed.

FULCRUM (in Mechanics). The prop or support by which a lever is sustained.

FULLER. One who cleans and scours cloth.

FULLER'S EARTH. A species of clay remarkable for the property of absorbing

ali, wherefore it is used by fullers to take grease out of cloth.

FULLING. The art of cleansing, scouring, and pressing cloths, to make them stronger, closer, and firmer, which is done by means of a water mill, called a fulling or scouring mill. These mills are nearly the same as corn mills, except in the millstones and the hopper. In France, corn is ground and cloth is fulled by the motion of the same wheel: cloths and woollen stuffs are sometimes fulled by means of soap, in the following manner; the cloth is laid in the trough of the fulling mill, and then the soap dissolved in pails of river or spring water is to be poured upon it by little and little. The cloth, after lying two hours in the soap, is taken out, stretched, and then returned to the trough. Upon being taken out a second time, the grease and filth is then wrung out. This process is afterwards repeated, and when the cloth has thus been brought to the quality and thickness required, it is scoured in hot water until it is quite clean.

FULMINATION. The noise which some minerals or metals make when heated in a crucible; as fulminating powder, which is made of nitre, potash, and the flowers of sulphur, triturated in a warm mortar. If this powder be fused in a ladle, and then set on fire, it will explode with a noise like thunder. If a solution of gold be precipitated by ammonia, the product will be fulminating gold, a grain of which, if held over a flame, will explode with a sharp loud noise.

FUMIGATION. A process by means of which the nitrous and other mineral acids, in a state of vapour, are dispersed through any place.

FUNCTION The performance of any duty.

FUNCTION (in Physiology). The exercise of any faculty or power, as the vital functions, or those which are necessary to life.

FUNCTION (in Algebra). An algebraical expression of a certain letter or quantity.

FUND (in Commerce). The capital or stock of a public company.

FUNDAMENTAL NOTE (in Music). The lowest note of the chord, to which all the rest are in some measure adapted, and by which they are regulated; it is otherwise called the key to the song.

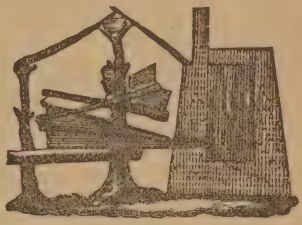
FUNDS, PUBLIC FUNDS, or STOCKS. The national debt formed into different capitals, upon which interest is payable.

FUNGI. The fourth order of the class Cryptogamia in the Linnæan system, consisting of funguses, mushrooms, truffles, &c. A fungus of this order is represented underneath.

FURLONG. A measure of length, consisting of forty poles.

FURLOUGH. Leave of absence given to a soldier, or noncommissioned officer.

FURNACE. A fire place for melting, distilling, and other chemical processes, so built as to cause the fire to burn vehemently.



FUR. The coat or covering of some animals, as sables, beavers, martens, squirrels, &c. which is used in various articles of dress, either for ornament or warmth.

FURS. Tinctures in coats of arms, which are supposed to represent the furs of animals.

FURRIER. One who deals in furs, and prepares them for the manufacturer.

FURRING (in Carpentry). The fixing thin scantlings or laths on the edges of timbers, to bring them to the even surface they were intended to form

FURRINGS (in Carpentry) The pieces of timber employed in making an even surface.

FURROW. A small trench cast up by the plough between the lands.

FUSEE (in Clockwork). A mechanical contrivance for equalising the power of

the main spring of a watch. The fusee on which the chain or catgut is wound, is made somewhat conical, so that its radius at every point may correspond with the strength of the spring, being greater and greater as the action of the spring becomes more and more weakened by unbending.

FUSEE (in Gunnery). The tube fixed into a bomb or grenade shell, which is filled with combustible materials, and furnished with a quick match on the top of it. When it is used it is driven into the bomb, being cut to a length proportioned to the distance that the bomb is to be thrown, that it may be spent and the bomb break when it falls

FUSIL. A small light musket.

FUSIL (in Heraldry). An artificial charge, representing a spindle. It is of the same shape as the lozenge, but it is longer.

FUSION. The art of reducing bodies to a fluid state by the artificial application of heat; as in the case of metals, glass, and similar bodies. Those substances which admit of being fused are termed fusible, but those which resist the action of fire or heat are termed refractory.

FUST. The shaft of a column.

FUSTIAN. A sort of nappy cotton.

FUSTIC. A dyeing wood brought from the West Indies

## G.

G, the seventh letter in the alphabet, as a numeral, formerly stood for 400; as a sign, it stands for the treble cliff, or the highest of the three cliffs; as an abbreviation, for grand, as G. C. B. Knight Grand Cross of the Bath.

GABEL. Formerly an excise in France on salt; in old English records, a rent, custom, or duty due to the lord.

GABIONS. Baskets of willow filled with earth to make a parapet or cover.

GABLE END The triangular end of a house, from the cornice or eaves to the top

GADFLY. An insect which has a face resembling that of an ape. It deposits its eggs on the backs of horses and other cattle.

GAGE, or GAUGE. An instrument for ascertaining measures of different kinds, as for measuring the state of rarefaction in the air pump, or determining the variations in the barometer, or for measuring the force of the winds, &c.

GAL. An abbreviation for gallon or Galatians.

GALAXY, or MILKY WAY. A long white luminous tract which seems to encompass the heavens like a girdle, formed by innumerable stars.

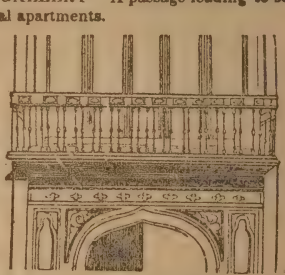
GALBANUM A resinous substance like frankincense.

GALE (among Mariners). A storm or violent wind.

GALL Another name for the bile

GALL BLADDER. An oblong membraneous receptacle for the bile.

GALLERY A passage leading to several apartments.



GALLERY (among Miners). A long narrow passage under ground

GALLERY (in Fortification). A covered walk across a ditch in a besieged town, made of strong planks and covered with earth. It was formerly used for carrying a mine to the foot of the ramparts. It ought to be eight feet high and ten or twelve feet wide. The beams ought to be half a foot thick, and planks nailed on cross

GALLEY (in Printing). A frame into which the compositor empties his stick as often as it is filled.

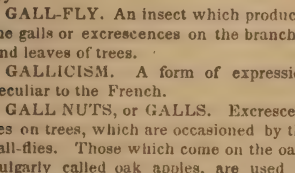
GALLEY (in Shipbuilding). A low built vessel, much used in the Mediterranean.

GALLEY-SLAVE. One condemned by way of punishment to work at the oar, to which he is chained, on board of a galley.

GALL-FLY. An insect which produces the galls or excrescences on the branches and leaves of trees.

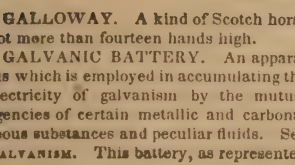
GALLICISM. A form of expression peculiar to the French.

GALL NUTS, or GALLS. Excrescences on trees, which are occasioned by the gall-flies. Those which come on the oak, vulgarly called oak apples, are used in making ink, dyeing, and dressing leather. They are represented underneath.



GALLOWAY. A kind of Scotch horse not more than fourteen hands high.

GALVANIC BATTERY. An apparatus which is employed in accumulating the electricity of galvanism by the mutual agencies of certain metallic and carbonaceous substances and peculiar fluids. See GALVANISM. This battery, as represented



underneath, consists of pieces of zinc, silver, and wet cloth, disposed in threes alternately, to the number of twenty or thirty triplicates, as may be thought proper.

GALVANISM. A branch of the science of electricity, first discovered accidentally by Galvani, a professor of Bologna, from whom it derives its name. This science treats of the effects of applying metals to the nerves and muscles of dead animals, which has been found to produce strong contractions and convulsions. The first observation on this extraordinary effect of electricity was made in the laboratory of M. Galvani, when one of his assistants happened to bring the point of his scalpel to the crural nerves of a skinned frog lying near the conductor, upon which the muscles of the limb were agitated with strong convulsions. Madame Galvani, who was present at the time, was struck with the circumstance, and communicated it instantly to M. Galvani, who repeated the experiment, and found that the convulsion only took place when a spark was drawn from the conductor at the time the scalpel was in contact with the nerve. After this, Galvani continued his experiments in various ways, and ascertained that the mere agency of metallic substances, provided they were dissimilar metals, would produce such convulsions. This subject engaged the attention of experimentalists both before and after the death of M. Galvani, which happened in 1798; but none added any thing materially to his discovery except M. Volta, who repeated the experiments of the former, and found that when two pieces of metal of different kinds were placed in different parts of an animal, and were either brought into contact or into connexion by means of a metallic arc, convulsions ensued every time, and that this effect was strongest when the metals were zinc and silver, particularly when several pairs of metals were employed, having pieces of moist cloth between them. This led him to the idea of constructing a battery, for the purpose of accumulating electricity, which has since been called the galvanic battery, or Voltaic pile

The apparatus first made by Volta, in 1800, consisted of a certain number of pairs of zinc and silver plates, separated from each other by pieces of wet cloth, in the order of zinc, silver, wet cloth, zinc, silver, wet cloth, in regular succession. The silver plates were chiefly pieces of coins, the plates of zinc and the pieces of wet cloth being of the same size. He found this much more powerful when the pieces of cloth were moistened with a solution of common salt instead of pure water, and an apparatus thus prepared was found to

possess the power of giving a very smart shock, similar to that of a small electric jar; and this effect took place as often as a communication was made between each end of the pile, and as long as the pieces of cloth remained moist: an improvement was made on this apparatus by Mr. Cruickshank, of Woolwich, which was denominated a galvanic trough, and consists of a box of baked wood, in which plates of copper, or of silver and zinc, soldered together at their edges, are cemented in such a manner as to leave a number of water-tight cells, corresponding to the number of the series; this serves to remedy the defect of the Voltaic pile, which, on account of the loss of moisture, loses its electrical action in a few days; but by Mr. Cruickshank's contrivance its activity may be renewed by filling the cells with the proper saline fluid.

GAMBOGE. A yellow resinous substance used by painters. It is the produce of a tree native of Cambogia or Cambaja, in the East Indies.

GAME. All sorts of birds and beasts that are objects of the chase. The laws which in England particularly protect this sort of property, are known by the name of the Game Laws By these laws certain qualifications of property are required, to give a person the privilege of being allowed to kill game; and penalties are imposed on all persons who kill game, either without such qualification or at improper seasons; likewise the sale of game is prohibited under every circumstance. Attempts have been repeatedly made in parliament to procure a repeal, either wholly or in part, of these laws, which are thought to be oppressive in their operation.

GAME. Any sport or amusement which affords a subject of contest, and a display of skill or superiority.

GAMECOCK. A cock bred to fight.

GAMESTER. One who is viciously addicted to playing at games.

GAMING. The wanton and extravagant playing at games for purposes of gain.

GAMUT (in Music). The table or scale of notes laid down by Guido, and marked by the monosyllables ut, re, mi, fa, sol, la; also the first note in the scale.

GANG (among Mariners). A select number of a ship's crew, appointed on any particular service.

GANG A number of persons who go or herd together for wicked purposes.

GANGLIONS. Small, hard, knotty tumours, formed on the nervous and tendinous parts

GANGRENE. A mortification in its first beginning.

GANGWAY (among Mariners). The name of several ways or passages from one part of a ship to another.

GANNET. A large water bird, common on the coasts of Scotland.

GANTLOPE, or GANTLET (in Military Affairs). An old punishment in which the criminal, running between the ranks, receives a lash from every man.

GANNET. The solan goose, a northern sea-fowl, allied to the pelican, and belonging to the same genus with the booby.

GANOIDIANS. An order of fishes having angular scales, covered with bright enamel, as the sturgeon.

GANGUE. The mineral substance which encloses any metallic ore in the vein: protogene granite.

GARAGAY. A rapacious bird of Mexico.

GARANCINE. An extract of madder by means of sulphuric acid.

GARDEN. A plot of ground enclosed and cultivated with extraordinary care, and furnished with the fine kinds of plants and flowers, for pleasure and use.

GARDENING. The process of tilling a garden and keeping it in order.

GARDENING, History of. Gardening is one of those domestic arts so essentially connected with the refined enjoyments of mankind, that with a garden has ever been associated every idea of cultivation and pure pleasure. From Holy Writ we learn that our first parents, before their fall, passed their lives in a garden, and their posterity, although, according to the denunciation of their Maker, doomed to till the ground with the sweat of their brow, nevertheless have at all times endeavoured to sweeten their labour by bringing home to themselves the enjoyments of cultivation within the narrow circle of their own habitation. The accounts of gardens among the ancients are confined to those of princes or great men, as the garden of Solomon and the garden of Alcinous the Phæacian king, which is minutely described by Homer in his Odyssey. The hanging gardens of Babylon, particularly spoken of by Diodorus and Strabo, may be reckoned among the wonders of art. Each side extended four hundred feet, so that the area of the base was nearly an acre. They rose with terraces, constructed one above another, and supported with pillars to the height of four hundred feet. These terraces were formed of stone, covered with reeds, and cemented with bitumen, over which was laid a double row of bricks,

and then a layer of earth of sufficient depth for plants to grow in it. The Persian kings also displayed their magnificence in their gardens, which they took care should contain all that was useful as well as beautiful. Their trees were ranged in straight lines and regular figures, and the margins of the walks were lined with beds of roses, violets, and other odoriferous flowers. Firs and planes were their favourite trees.

The Greeks appear to have derived their ideas of gardening from the Persians, if we may judge from the allusions of writers to this subject. Xenophon particularly admires the garden of Cyrus at Sardis. The narcissus, the violet, the rose, the ivy, the pines, and other plants chosen by the Persians, either for their beauty or their fragrance, were the theme of praise among the Grecian poets and philosophers. They also consulted shade, fresh breezes, and the beauties of verdant scenery, as we learn from the vale of Tempe described by Ælian, and the shady groves of Athens described by Plutarch. With the beauties of nature they also associated those of art, particularly such as derived an interest from their religious or social attachments. Hence we find that their gardens were decorated with temples or altars dedicated to their gods, or the tombs of their ancestors or of great men whose memory they held dear. Their favourite fruits were the vine, the fig, the pomegranate, and the melon.

The first garden mentioned among the Romans is that of Tarquinius Superbus, which abounded with flowers, chiefly roses and poppies. As the Roman people extended their conquests, and their intercourse with other nations became more frequent, they increased in luxurious and expensive indulgences, which they displayed in the decorations of their gardens. Lucullus, the conqueror of Mithridates, who introduced from Asia the cherry, the peach, and the apricot, first gave the Romans a specimen of Asiatic grandeur, in his garden near Baiæ, in Naples, which was remarkable for prodigious works of art, as artificial mountains, immense pieces of water, and numerous costly embellishments. This gave that tone of artificiality to the Roman gardens which was for so many centuries after retained in Europe. Slopes, terraces, a wilderness, shrubs methodically trimmed or cut into certain shapes, a marble basin, artificial fountains, or a cascade falling into the basin, bay trees alternately planted with planes, a straight walk, from which issued others, parted off by hedges of box, and apple trees, with obelisks placed between every two; these were the ingredients of a Roman garden, as described by Pliny the younger, in which was wanted nothing but the decoration of a parterre to make a garden in the reign of Trajan to serve for a description of one in the seventeenth century. A more correct taste in the art of gardening has obtained within the last century. Nature now derives every possible assistance from art, without losing any thing of her simplicity.

GARLAND. An ornament of flowers made for the head or other purposes.

GARLAND (among Mariners). A collar of rope wound up about the head of a main mast, to keep the shrouds from galling.

GARLIC. A bulbous root, consisting of many small tubercles included in its coats. It has a strong smell and an acrid taste, but is much used for food.

GARNET. A sort of carbuncle, so called from its red colour, resembling the seed of a pomegranate.

GARNISHMENT (in Law). A warning given to any one for his appearance in court.

GARRET. The uppermost floor in a house.

GARRISON. A place of defence occupied by troops; also the troops themselves.

GARTER. A bandage for the leg.

GARTER (in Heraldry). The principal badge of the highest order of knighthood in England, called the most Noble Order of the Garter.

GARTER KING AT ARMS. The chief of the three kings at arms.

GARTER, Order of the. In England, an order of knights instituted by Edward III. which consists of twenty-six knights companions. The habit and ensigns of this order are the garter, mantle, cap, and collar. The badge of the order is the image of Saint George, called the George.

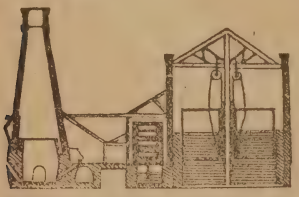
GAS. A chemical term derived from the German geist, spirit, denoting an elastic aerial fluid, of which there are different kinds, some being acid, as carbonic acid; some alkalies, as ammonia, &c.

GAS LIGHT. Light produced by gas burning in lamps, &c. This gas, which is a combination of oxygen and hydrogen, is carried away by pipes and burnt at the orifice of escape. It is produced either from pit coal or whale oil. The process for producing coal gas is as follows. The coal, being broken to a convenient size, is placed in oblong cast iron retorts, ranged in furnaces to keep them at a red heat, and all the volatile products are conveyed

by a common tube into a condensing vessel, which is kept cool by being immersed in water. In the condenser are retained the water, tar, and other condensible vapours, while the gaseous products, namely, the carburetted hydrogen, the sulphuretted hydrogen, and the carbonic oxyde and acid are passed through strata of slaked lime, by which the sulphuretted hydrogen and carbonic gases are absorbed, and the carburetted hydrogen and hydrogen gases in their purified state are transmitted into the gasometers, from which the several pipes are supplied that convey the gas to the lamps. The best kind of coal for distillation is that which contains most bitumen and least sulphur.

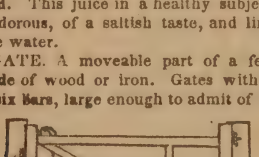
After the discovery of obtaining gas from coal, attempts were made to extract it from other substances. The method of procuring it from oil is said to have originated in an attempt made in 1814 to convert coal tar into gas. Since that period, numerous works have been constructed for the manufacture of oil gas, which, in the opinion of many, is preferable to the coal gas.

GASOMETER, or GAZOMETER. A reservoir for holding a considerable quantity of gas. It is made of thin tinned iron plate, and mostly provided with some contrivance for measuring the quantity of gas it contains.



GASTRIC JUICE. A fluid separated by the capillary vessels of the stomach, and serving as the principal solvent of the food. This juice in a healthy subject is inodorous, of a saltish taste, and limpid like water.

GATE. A moveable part of a fence, made of wood or iron. Gates with five or six bars, large enough to admit of carts



passing through, are most commonly employed in fences for parting off fields.

GAVELKIND. A tenure or custom in Kent in England, whereby the lands of the father were divided equally at his death among his sons.

GAUGING. The art of measuring the capacities of all kinds of vessels.

GAUNTLET. An iron glove for the hand, which was formerly used in single combat. It is borne in coat armour, as in the annexed figure.

GAUZE. A very thin sort of silk

GAZELLE. A beautiful species of the Antelope frequently alluded to, in Persian poetry.

GAZETTE. A newspaper; particularly that published by authority. The firs Gazette in England was published in 1665 at Oxford, where the court then was

GAZETTEER. A writer or publishe of a Gazette; also the title of a geographi cal dictionary.

GELATINE, or JELLY. An animal sub stance, soluble in water, and capable of assuming an elastic or tremulous consistence when cooled, and liquifying again by the application of heat.

GEM. A precious stone; or a sort of siliceous earth, consisting of silica and alumina, with a small portion of lime and oxyde of iron. The gem is remarkable for its hardness and internal lustre. Under this name is comprehended the diamond, ruby, sapphire, hyacinth, beryl, garnet, chrysolite, &c. To these have been added rock crystals, the finer flints of pebbles, the cat's eye, the oculus mundi, the chalcedony, the moon stones, the onyx, the cornelian, the sardonyx, agate, &c.

The imitation of antique gems, by taking the impressions and figures upon them, in glass of the colour of the original gem, or on sealing wax or brimstone, has been practised at different times by persons who, in respect to the first method of taking them on glass, have kept the art to themselves, and suffered it to die with them. But the process adopted by Mr. Homberg, which has also been communicated by hir to the world, is highly esteemed for the perfection to which he has brought the art From the engraved gems of the king' cabinet, he took such exact resemblances of the originals as sometimes to deceive

the nicest judges, who mistook them for the true antique stones. His method consists in taking the impression of the gem in a very fine earth, and then conveying the impression from the earth to a piece of half melted glass.

GEMINI, the TWINS. A constellation, and sign in the zodiac, marked thus ♊.

GEN. An abbreviation for General and Genesis.

GENDARMES, or GENS D'ARMES. A select body of soldiers in the French army, who are now much employed by the police.

GENDER (in Grammar). A distinction in nouns to mark the sexes; genders are either masculine, for the male sex; feminine, for the female sex; or neuter, for those which are of neither sex.

GENEALOGY. A series or succession of ancestors; also an account of the relations and alliances of any person or family.

GENERAL (in Military Affairs). An officer in chief, to whom the command of troops is intrusted; also a particular beat of drum in the morning, to give notice to the foot to march.

GENERALISSIMO. The supreme general or commander in chief of an army.

GENERAL ISSUE (in Law). That plea which traverses or denies at once the whole declaration or indictment.

GENERAL OFFICERS. All officers above the rank of lieutenant-colonel in the line.

GENERATING (in Geometry). A term for a line or figure, which by its motion produces any other figure.

GENERIC CHARACTER (in Natural History). The character which distinguishes the genera or general kinds of plants, animals, &c. from each other. This character belongs to all the species of the same genus or kind.

GENERIC NAME (in Natural History). The name of any genus or kind of animal, plant, or mineral. This name can be described only by describing the generic character.

GENET An animal of the weasel kind, resembling the civet cat in its musk smell.

GENEVA. See GIN.

GENITIVE CASE. The second case in Latin and Greek nouns, which denote possession. It is marked in English by s with an apostrophe, thus ('s).

GENII. Good or evil spirits, much thought of in the eastern nations. The Tales of the Genii profess to give an account of their proceedings and dealings with mankind.

GENTILES A name given by the Jews to all who were not of the twelve tribes of Israel; among Christians, it is the name of all heathens who did not embrace the Christian faith.

GENTLEMAN. Anciently, one above the state of a yeoman.

GENTRY (in Law). The order and rank of gentlemen, descended from ancient families, that had always borne coat armour.

GENTOO. A native of Hindostan.

GENUS (in Natural History). A subdivision of a class or order of natural objects animal, vegetable, or mineral, and having under it different species or variety

GENUS (among Logicians). That which is common to a number of individuals; the summum genus, or highest genus, is that which appertains to the greatest number of individuals, as substance, which belongs to all material.

GEOCENTRIC. Being concentric with the earth, or having the earth for its centre a term applied to a planet in its orbit.

GEOGRAPHICAL MILE. The 60th part of a degree.

GEOGRAPHY. The science which treats of the earth as an habitable world, comprehending a description of the whole globe, together with an account of all its parts, limits, inhabitants, &c. Geography is either general or particular. General geography comprehends the knowledge of the earth in general, and the affections common to the whole globe, as its figure, magnitude, motions, circles, winds, tides, meteors, divisions into land and water &c. Particular geography has respect to particular countries, showing their boundaries, figure, climate, seasons, inhabitants, arts, customs, language, history, &c. When it respects regions, districts, or parts of countries, it is called chorography, and when particular cities, towns, or villages, &c. it is called topography. Particular geography is also distinguished into ancient geography, when it treats of the countries and places existing among the ancients; modern geography, when it treats of modern places; the geography of the middle ages, which treats of places that flourished in the middle ages; and lastly, sacred geography, which treats of places mentioned in the Bible.

The earth, considered as a planet, is supposed to be marked by circles corresponding to those which the sun apparently describes in the heavens, as the horizon, which divides the sphere into two parts or hemispheres, the one upper and visible the other lower and invisible; the equator which is equidistant from both the poles, and divides the globe into northern and

southern hemispheres; the azimuth, or vertical circles, which intersect each other at the zenith and nadir; the meridian, which crosses the equator at right angles, and from which the distance of places east and west is reckoned; the parallels of latitude, small circles supposed to be parallel to the equator, which show the latitude of places, or their distance north and south from the equator; the arctic and antarctic circles, two circles at the distance of twenty three degrees and a half from the north and south poles; the two tropics, namely, the tropic of Cancer and the tropic of Capricorn, the first north and the second south, twenty-three degrees and a half distant from the equator; to these might be added the hour circles, or the twenty-four circles passing through the equator, and corresponding to the twenty-four hours of the day

From the diversity in the length of the days and nights, geographers divide the globe into certain districts, called climates, measured either by hours or half hours; and from the effects of light and heat upon the earth in different parts, it is distinguished into five zones, namely, one torrid or burning zone, between the tropics; two temperate, between the polar circles and the tropics; two frigid or frozen zones, between the polar circles and the poles. The inhabitants of the earth, as to their relative situation in regard to each other, are distinguished into the antipodes, who live directly opposite to each other; the antoeci, who live under the same meridian, but opposite parallels of latitude; the perioeci, who live under the same parallels of latitude, but opposite meridians.

The earth is naturally divided into land and water, and according to some computations about three-fourths of it is occupied by water, and the remaining fourth by land. The land is distinguished into continents, or large portions not separated by any sea, as the four great continents, Europe, Asia, Africa, and America, which are the four quarters of the world; islands, smaller portions, entirely surrounded by water, as Great Britain, Iceland, &c.; peninsulas, or tracts of land almost surrounded by water, as the Morea, in Greece; isthmuses, or necks of land joining two continents, as the isthmus of Suez, joining Africa to Asia; promontories, or capes, high portions of land stretching out into the sea, as the Cape of Good Hope; mountains, or elevations of the earth's surface, such as the Alps and Pyrenees in Europe, the Caucasus and Uralian Mountains in Asia, and the Andes in America. The water is distinguished into oceans, which are vast collections which separate the continents from each other, as the Pacific and Atlantic Oceans; seas, or smaller collections of water, as the Indian Sea, Black Sea, &c.; gulfs, parts of any sea surrounded nearly with land, as the Gulf of Venice, if they have a wide entrance they are bays, as the Bay of Biscay; straits, narrow passages joining two seas, as the Strait of Gibraltar; lakes, large collections entirely surrounded by land, as the Lake of Geneva rivers, streams of water which have their source in some spring, and empty themselves into some other river or piece of water. The principal rivers, as to their magnitudes, are the Amazon Senegal, Nile, St. Lawrence, La Plata, Mississippi Volga, Oronooko, Ganges, Euphrates, Danube, Don, Indus, Dnieper, and Dwina, but if estimated according to the length of course which they run, their order will be rather different, but the Amazon is the largest in every respect.

The earth is politically divided into countries, which, according to their government, are distinguished into empires, if they are of great extent, as the Russian and Austrian empires; or kingdoms, as the kingdoms of Great Britain, Spain, &c., or Republics as the United States, Mexico, France, &c., or States as Holland, Netherlands, &c., under this head geography treats of the subdivisions of each country into provinces cities, towns, &c.; also of the number of inhabitants, the nature and produce of the soil, the animals peculiar to each place, the state of the arts, manufactures, commerce, &c. which constitute the wealth of each country, and is comprehended under the name of statistics. To all this may be added an account of curiosities, natural and artificial, as volcanoes, caverns, canals, springs, fountains, and the like. Besides geography treats not only of the earth's surface, but also of the affections which it is exposed to from the waters of the ocean which produce the flux and reflux of the tide, and the currents belonging to particular seas, as in the Mediterranean and Euxine seas; likewise of the winds which blow in particular manners and directions, such as the monsoons, or trade winds, which blow for some months in the year one way and the rest another; and, lastly, the meteorological peculiarities of each country, such as regards the degree of heat and cold, the quantity of rain which falls in particular places, or within a given period

the duration of frosts, and other particulars respecting the climate, and its effects upon the surrounding objects.

Geographical descriptions are moreover illustrated by engraved delineations, which when they represent an ocean, sea, or any piece of water, is called a chart, but when they represent any parts of the earth generally are termed maps. In all maps the north is at the top and the south at the bottom, the east on the right and the west on the left. Maps are always laid down according to a certain scale, taken from the degrees of latitude which are marked on the east and west side of the map, those of longitude being marked on the north and south side. As the earth is a globe, a map of the whole earth must necessarily consist of two parts, both sides of the globe not being visible at once; accordingly in a universal map the right hand circle shows the old world, that is, Europe, Asia, and Africa, and the left hand circle the new world, or America. Upon the general map are marked the circles correspondent to those of the sphere, as the equator, &c. Particular maps, being parts of this globe, retain the meridians and parallels belonging to the particular part, which are made smaller or larger according to the size of the map, and the distance of the places mentioned are proportioned to the breadth of the parallels as nearly as they can be.

In maps the sea is denoted by an open space, the thick shadowing denotes the sea-coast, rivers are marked by shadowed serpentine lines, if large by double and treble lines made strong and black, roads by double lines, divisions of countries by dotted lines, and sometimes distinct colours, those for kingdoms and provinces being larger than the rest; forests are represented by trees, mountains by rising shadows, sands by dotted beds, lakes by shadowed coasts, rocks by pointed things sticking up sharp in the sea, the course of the winds by arrows. The names of villages are written in a running hand, those of towns in a Roman character, those of cities in small capitals, and those of provinces in large capitals. Cities or great towns are made like small houses, with a little circle in the middle of them, but smaller towns or villages are marked only with little circles; bridges by a double line across the river. In some maps, particularly old maps, cities, as the sees of bishops, were marked with a cross or mitre, and those of archbishops with a double cross, universities with a star or a caduceus, abbeys with a crook or pastoral staff, fortresses with an angle, as of a bastion, castles with a little flag, gentlemen's seats with a single house only, &c.

The apparatus called the terrestrial globe has a complete map of the earth drawn on its surface, with the several imaginary circles, and is moreover fitted to illustrate the movements of the earth as a planet, the latitudes, longitudes, and distances of places, the hours of day and night in different part, with a number of other interesting problems.

GEOGRAPHY, History of. The study of geography, as far as it was connected with or depended upon astronomy, in all probability began and kept pace with it. Thales, the Grecian astronomer, constructed a globe, representing the land and sea upon a table, which art he derived from the Egyptians, among whom maps were in use even as early as the days of Sesostris This conqueror is said to have represented in this manner the conquests he made and the countries he marched through. That the Israelites practised the art of geography at an early period is clear from the account we have in Scripture of Joshua having sent men to walk through the land of Canaan, which they described in seven parts, in a book. The first map among the Greeks on record is that of Anaximander, which is probably referred to by Hipparchus, under the designation of the ancient map. Geographical descriptions were, however, prior to this, for the works of Homer abound with the names of places and an account of several particulars respecting them. The first professed writer on the subject of geography was Scylax, if the author of the Periplus now extant be the same as the philosopher of that name mentioned by Herodotus. Herodotus the historian has interspersed his work with a minute geographical description of the places which occur in the course of his narrative; and geographical notices are also to be found scattered in the writings of Thucydides and Xenophon. The conquests of Alexander doubtless increased the desire to know more of the habitable world, which that prince encouraged by sending Nearchus on a voyage of discovery in the Red Sea, a description of which is still extant. About the same time flourished the geographer Dicearchus, of whose works some fragments remain.

Eratosthenes is said to have been the first who attempted to reduce the science of geography to a system, by the application of astronomical principles. He introduced a regular parallel of latitude, which began at the Straits of Gibraltar, and proceeded through the isle of Rhodes to the mouth

tains of India, noting all the places it passed through. He drew this parallel not by the sameness of the latitude, but by observing where the longest day was fourteen hours and a half, which Hipparchus afterwards found to be thirty-six. Eratosthenes also drew maps of the countries then known, with as much accuracy as his scanty information would enable him, but they contained little more than an imperfect representation of the states of Greece and the dominions of Alexander's successors. He was ignorant, as Strabo informs us, of Gaul, Spain, Germany, Britain, Italy, and the coast of the Adriatic, and had only a faint idea of the western parts of Europe. Hipparchus improved upon the labours of Eratosthenes, and determined both the latitudes and longitudes from celestial observations.

Under the Roman emperors geography acquired an increasing interest, from the perpetual accessions which were made by conquest to the empire. Accordingly, we find the number of geographical writers to be greatly increased, and their writings to be more correct and particular. Besides Pomponius Mela, who, in his Cosmographia, has given a neat and comprehensive account of the known world, and Dionysius Periegetes, who has written a system of geography in verse, Strabo has left a work on this subject which, in point of methodical arrangement and extent of information, exceeded any thing that had been hitherto published. This was followed, after the interval of more than a century, by the great work of Ptolemy on this subject, in the execution of which he took astronomy to his aid for determining the situation of places. He fixed the latitudes and longitudes of all the principal places in the known world, and expressed them in degrees, after the manner of Hipparchus, making his calculations from the proportions of the gnomon to its shadow, as observed by different astronomers at the time of the equinoxes and solstices, and deduced from these the length of the longest days. He also measured and computed the distances of the principal roads mentioned in the different surveys and itineraries which had been made at different times by order of the emperors, and compared them with such reports as he could gather from travellers. In this manner did Ptolemy execute his system of geography, which, as a work of science, has deservedly held the first rank among the works of the ancients, and, considered as the labour of one man, was never surpassed and scarcely ever equalled

With the exception of the Geographical Dictionary of Stephanus Byzantinus, in the fifth and sixth centuries, and the scattered geographical notices interspersed in the works of the Byzantine historians, the subject of geography was neglected until the thirteenth century, when John Sacro de Bosco published his treatise on the sphere, which contained an account of the earth as far as it was connected with the doctrine of the sphere. Nothing farther was done towards the advancement of this science until the discovery of the New World, when geographical knowledge received continual accessions by new discoveries, and the spirit of investigation and research which they awakened.

During the last twenty-five years, many discoveries have been made and knowledge accumulated. D'Urville, Ross, Kane, Hayes, and others have made strenuous efforts to penetrate the polar continent, and added largely to our knowledge of the arctic regions. The travels and explorations of Burton, Speke, Livingston and Stanley, in Africa, have left little to be known regarding this vast Continent.

GEOCORISÆ. A family of Hymenopterous insects with very long antennæ inserted between the eyes.

GEOCRONITE. A lead-grey ore of antimony and lead.

GEOCYCLIC. Encircling the earth periodically.

GEODE. In mineralogy, a rounded nodule of stone containing a small cavity, lined usually with crystals.

GEODESY. That part of practical geometry which has for its object the determination of the magnitude and figure either of the whole earth or of any given portion of its surface.

GEOGNOSY. That part of natural history which treats of the structure of the earth. The same with geology.

GEOGONY. The doctrine of the formation of the earth.

GEOMANCY. A kind of pretended divination by means of figures or lines.

GEOLOGY. That part of natural philosophy which treats of the formation and structure of the earth beneath its surface, and the changes it has undergone. Geology is the history of the primeval conditions of our planet, as illustrated in the monuments of change which exhibit themselves on and beneath the surface of the earth. It is, in fact, the great history of Nature, which classifies, by means of existing monuments, the various rocks and strata of the earth's crust, according to their comparative ages, and treats of the different races of animals and plants which characterise the mundane formations or systems deposited by water during the lapse of countless ages. The study of geology having been most

effectually pursued by inquiring into the structure of mountains. It has been on that account likewise designated by the name of orychthiology. Mountains have been found by geologists to consist, at a considerable depth, of strata regularly disposed, which have been classed under the heads of granite, gneiss, mica slate, clay slate, primitive limestone, primitive trap, serpentine porphyry, syenite topaz, quartz rock, primitive flinty slate, primitive gypsum. These are altogether denominated primitive rocks, which have no organic remains, and appear to have been undisturbed. But in the strata above these there are evident signs of violent fractures caused by the action of waters. In this manner valleys have been excavated, and a separation thus occasioned in strata that once evidently formed one continuous range. Such water-worn fragments have, from the cause of their existence, been denominated diluvium, to distinguish them from other debris produced by causes still in operation, such as the alluvium or the accession to lands by inundations, torrents, and the like, as also the volcanic rocks formed by the eruptions of mountains. Besides the rocky fragments and insulated hills above mentioned, the strata above these primitive rocks contain also organic remains. In those immediately above, called transition rocks, fossil remains of corals and shells are found in small quantities, as also in the carboniferous limestone that lies next to these rocks. The coal strata, which follow, abound with vegetable remains of ferns, flags, reeds of unknown species, and large trunks of succulent plants, which are altogether unknown either in description or in nature. Above the coals are beds containing corals and shells, which, like those in the strata below, are characterized by this peculiarity, that in some places they are to be found in families, and that in other places there will be found beds of marine shells in one layer, and those peculiar to fresh water in another layer, resting one over the other in alternate succession. In the highest of the regular strata, called the crag, will be found the shells at present existing in the same coast, and, lastly, over all these strata is a covering of gravel, which is remarkable for containing the remains of numerous quadrupeds, as the bones, horns, teeth, shells, scales, &c. These animals are for the most part either foreign to the climates where their remains are found, or they are of a larger size than any now known, or they are altogether different from any species of animal hitherto known or mentioned

Among those animals whose remains have been found in countries far distant from the places which they inhabit are the elephant and the rhinoceros, numerous remains of which have been found in England, France, Germany, Italy, and other parts of Europe, but still more in Siberia, where, throughout the whole extent of that country, there is scarcely a river or a shore in which have not been found the bones of elephants and other animals. Near the river Willioni, in the eastern part of Siberia, has been dug up a rhinoceros still possessing the skin, fat, and muscles; and fossil ivory has been procured in immense quantities in the countries nearest to the arctic circle. So numerous are the remains that have already been dug up, as to form immense collections in the cabinets of the great, particularly in that of the Prince of Hesse Darmstadt and the Elector of Manheim. Naturalists have also been enabled, in part, to ascertain the species of these animals, at least as far as regards the rhinoceros, which is of the double horned kind; but in regard to the elephantine remains, although very numerous, it is not so certain whether they are of any known species or otherwise. As to the animals differing in size from those of their own species at present, Ireland furnishes specimens of deer that have been dug up of an extraordinary magnitude; and in Scotland, a kind of oxen has been found bigger than the largest species existing at present. Of animals altogether unknown, both North and South America, and other parts, furnish several examples, as the mammoth, the mastodon, and other nameless animals of a prodigious size.

This remarkable fact, of the fossil remains of animals, did not escape the notice of the ancients, for Xenophanes, above four hundred years before the Christian era, is said to have discovered the remains of some marine animals imbedded in rocks, from which he absurdly inferred the eternity of the world. Herodotus also ascertained the existence of fossil shells, from which, with much greater reason, he was led to conclude that the sea had once occupied those parts. Also in the pyramids, the stones were found to contain the remains of animals, of which there existed in his time no corresponding species. Strabo, who saw these fragments of stone lying about the pyramids, took them to be petrified lentils, that had been used by the workmen; at the same time this writer, as well as Pliny and others, attest the existence of such animal remains, and in a high state of perfection. In the Natural Histo-

ry of Pliny many fossil remains are spoken of, as the bucardia, resembling an ox's heart; the glossopetra, having the form of a tongue; the horns of ammon, resembling a ram's horn; the lepidotes, like the scales of fishes, &c.

GEOMETRY. That branch of mathematics which treats of the properties of extension and figure. Geometry is distinguished into the theoretical and the practical. Theoretical or speculative geometry treats of the various properties and relations in magnitudes, &c. Practical geometry comprehends the construction of figures, the drawing of lines in certain positions, as parallel or perpendicular to each other, &c. Speculative geometry is again distinguished into elementary geometry, that treats of the properties and proportions of right lines and right lined figures, as also of the circle and its several parts; and the sublime or transcendental geometry, that treats of the higher order of curves, &c.

The simple principles of geometry are explained in definitions and axioms. The following are the most important definitions. A point is that which has neither length, breadth, nor thickness; a line has length without breadth or thickness; a superficies, or surface, has length and breadth only, the boundaries of which are lines; a solid has length, breadth, and thickness, the boundaries of a solid are surfaces. A straight line lies evenly between the parts, parallel lines keep at the same distance from each other when extended indefinitely. A perpendicular line is perpendicular to another line. An angle is formed by the meeting of two lines in a point; it is a right angle when formed by one line falling perpendicularly on another line; an obtuse angle, when it is greater than a right angle; and an acute angle when it is less. A figure is a space included within one or more boundaries, called sides; it is rectilinear when contained by right lines, and curvilinear when contained by curved lines; a rectilinear figure contained by three right lines is a triangle; if by four, quadrilateral; if by five, a pentagon; if by six, a hexagon, &c.; by more than twelve, a polygon.

Triangles are distinguished according to the length of their sides, into equilateral, having all the sides equal; isoceles, having two sides equal; and scalene, having all the sides unequal; or according to their angles, into right angled, if they have one right angle; obtuse angled, if they have one obtuse angle; and acute angled, if they have all acute angles. Every quadrilateral or four-sided figure is called a parallelogram when it has its sides parallel, and a rectangle when all its angles are right angles. Four-sided figures are moreover distinguished according to their sides and angles, into a square, which has all its sides equal and its angles right ones; an oblong square, which has its opposite sides equal and its angles right ones; a rhombus, having all the sides equal, but the angles not right ones; and a rhomboid, having the opposite sides equal and the angles not right ones. When a quadrilateral has none of its sides parallel it is a trapezium, and when only two of its sides parallel a trapezoid. The diagonal is the right line which divides a parallelogram into two equal parts. The base of a figure is the side on which it is supposed to stand. The vertex is the extreme point opposite to the base; the altitude is the perpendicular distance from the vertex to the base. The area of a figure is the quantity of space contained within its boundaries.

Of curvilinear figures in common geometry is the circle, which is a plane figure bounded by a curve line called the circumference, which is equally distant from a point called the centre. The diameter of a circle is a straight line drawn from one side of the circumference to the other, through the centre, so as to divide it into two equal parts. The radius of a circle is a straight line drawn from the centre to the circumference: the segment of a circle is a part cut off by a line called the chord. The circumference of every circle is supposed to be divided into 360 equal parts, called degrees, every degree into 60 parts called minutes, and every minute into 60 parts called seconds.

Solids are distinguished into a prism, the sides of which are parallelograms, and the two ends or bases are similar; polygons, parallel to each other; the cube, consisting of six equal square sides or faces; the pyramid, having any plane figure for its base and triangles for its sides, all terminating in one common point or vertex, the cylinder, which is generated by the rotation of a rectangle about one of its sides supposed to be at rest; the cone, a solid having a circular base, and its other extremity terminated in a single point or vertex. Those curves which are formed by the intersection of a plane with a cone form the subject of conic sections, which is a branch of sublime geometry.

Ratio is the mutual relation of two magnitudes of the same kind to one another, in respect to quantity, as 2 to 1, which is double; the former of these is called the antecedent and the latter the consequent.

proportion is the similitude of ratios, as 6 is to 2 as 3 is to 1, that is a triple ratio in both cases.

An axiom is a plain truth that wants no demonstration, as that the whole is greater than a part. A postulate is that which requires to be granted as true before another thing can be demonstrated. A proposition is that which proposes something to be done or demonstrated; it is a problem when it proposes any thing to be done, as to divide a given line into two equal parts, or to raise a perpendicular, &c.; and a theorem when it proposes something to be shown, as that triangles of the same base and altitude are equal to each other, or that all the angles in the same segment of an arch are equal, &c.

GEOMETRY, History of. The origin of geometry is ascribed by Herodotus to the Egyptians, who, in consequence of the inundations of the Nile, which carried away all their landmarks, were under the necessity of distinguishing and laying out their lands by the consideration of their figure and quantity, whence the word geometry in the Greek signifies literally land-measuring. The Greeks, who cultivated this science more than any other people, doubtless learned the rudiments from the Egyptians; for Thales, who travelled into Egypt and acquired a sufficient knowledge of astronomy to calculate, must also have first become acquainted with the principles of geometry to assist him in his astronomical inquiries. Pythagoras, the pupil and friend of Thales, distinguished himself by his discoveries in arithmetic, as well as geometry. He invented the multiplication table, called after him the Abacus Pythagoricus, and in geometry he discovered the thirty-second and forty-seventh propositions in the first book of Euclid's Elements. Soon after this flourished Anaximander, Anaximenes, Anaxagoras, Cleostratus, Œnopides, and Zenodorus, all celebrated geometricians, of whose works nothing remains except of the last. They were succeeded by Hipparchus, who rendered himself celebrated by the quadrature of the lines called after him, as also by his attempt at the quadrature of the cube, which was a matter of great interest among the ancient mathematicians, and is said to have taken its rise in an answer of the oracle at Delphi, which, when consulted on the occasion of some public calamity, answered 'Double the altar,' which was an exact cube. Notwithstanding the failure of Hipparchus, others renewed the attempt, which although it proved unsuccessful as to that particular object, nevertheless is said to have led to the discoveries of other geometrical properties, as the conchoid of Nicomedes, the cissoid of Diocles, and the quadratrix of Dinostratus. This latter geometrician was the follower and friend of Plato, whose devotion to the science of geometry was such that he caused it to be inscribed over the door of his school, 'Let no one enter here who is ignorant of geometry.' To Plato we are indebted for that branch of geometry known by the name of conic sections, of which his scholar Aristeus is said to have composed five books that are highly spoken of by the ancients, but are not now extant. Eudoxus and Menechemus were also disciples of Plato, and distinguished themselves, the former in geometry as well as astronomy, the latter by his application of conic sections to many problems. After an interval of ninety years from their time, that is, about three hundred years before Christ, flourished Euclid, who, by collecting and methodizing all the principles of geometry then known into a regular system, called his Elements of Geometry, secured to himself a celebrity which, in point of extent, has never been surpassed, and perhaps scarcely ever equalled, his work having ever since been considered as the standard of all geometrical knowledge. Euclid was quickly followed by Archimedes, a mathematical genius, who added many discoveries to the sciences of geometry, mechanics, optics, and hydrodynamics. In geometry he discovered the ratio between the sphere and the circumscribing cylinder, found the quadrature of the parabola, and the solidity of its conoid; he invented the spiral which bears his name, and discovered its rectification, besides a variety of other important geometrical propositions, many of which are extant and attest the skill and ingenuity of the author.

Apollonius of Perga, who, from his writings, acquired the name of the Great Geometrician, flourished about thirty years after Archimedes. His work on the Conic Sections, which is the principal piece of his extant, was in all probability the best of its kind in that day, and has since been the groundwork of all works published on that subject. Of those who after Apollonius distinguished themselves in their time in the cultivation of the geometrical science, there are but few who added any thing worthy of particular notice. Eratosthenes attempted to measure the circumference of the earth; Ctesibius invented water pumps; Hero of Alexandria, clepsydræ; Theodosius, who lived in the first century

of the Christian æra, wrote a treatise on the sphere, which was one of the first on spherical trigonometry.

After an interval of three or four centuries from the time of Theodosius, we meet with the names of Pappus the commentator of Apollonius, Theon, the commentator of Ptolemy, and of Proclus another commentator on the ancient mathematicians. The destruction of the library of Alexandria by the Saracens was very fatal to the cultivation of geometry, which had flourished there more than any where else: all the geometricians from every part had assembled there, and when driven away they were deprived both of their books and instruments. It is not surprising, therefore, that the study of geometry was for many centuries almost entirely forgotten amidst the troubles which desolated all Europe on the irruption of the northern tribes. The Arabs, who by the ravages they committed at Alexandria had done the most injury to the science of geometry, were, after the lapse of two centuries, the cultivators of that which they had nearly annihilated. They studied the works of the Greeks, and showed their proficiency in the correctness of their comments on these writings.

Whilst the Arabs were thus promoting the cause of science generally, Europe remained in a state of comparative barbarism, nor was the study of geometry revived among the Europeans before the fourteenth and fifteenth centuries, when by the translations of the ancient writings, the taste for geometry became very general among the thinking part of the community. In the following century there arose mathematicians who added very materially to the stock of geometrical knowledge. Cardan applied algebra to the resolution of geometrical problems; and Descartes, who followed at the distance of nearly a century, pursued this application of algebra to geometry still farther. At the same period with Descartes flourished Cavelerius who, in his work on 'Indivisibles,' struck out a new path to himself, in which he was followed by many writers of great celebrity, as Wallis, Pasca., Fermat, Roberval, Leibnitz, Newton, and many others, who set forth geometry in a new light, and formed a new system of the science. Among the treatises in which are embodied the geometrical principles of the moderns and ancients may be reckoned the Elements of Euclid by Simson and Playfair, the treatises of Ozanam, Clavius, Bonnycastle, Purce, Davies, Mulcahy, &c.

**GEORGE St.** The patron saint of England, is said to have been a great warrior of Cappadocia, and a martyr in the Christian cause.

GEORGICS. Books treating of husbandry, after the manner of Virgil's poems on rural subjects, which are so called.

GERANIUM. A genus of plants, the numerous species of which are remarkable for the beauty either of their leaves or their flowers, or both. The seeds of the flower are contained in a husk, which resembles a stork's beak, whence it has acquired the English name of crane's bill.

GERMAN (in Law). Whole or entire as respects genealogy or descent, as brothers german, those who are so on both father and mother's side.

GERMEN (in Botany). The germ, ovary, or seed bud, which is the lower part or base of the pistil.

GERMINATION. The act of sprouting forth, as applied to the seeds of vegetables; also the time when they vegetate.

GIANTS CAUSEWAY. A vast collection of a black kind of marle, called basaltes, in the county of Antrim in Ireland. The masses of rock are there disposed in such regular order, and to such an extent as to make this causeway one of the greatest curiosities in nature.

GIBBOUS (in Astronomy). A term applied to the enlightened part of the moon, during her course from full to new, when the dark part appears falcated or horned, and the light part convex or gibbous.

GIFT (in Law). A conveyance which passeth either lands or goods; a transfer of any thing without a valuable consideration.

GIG. A very light kind of two-wheeled chaise.

GILD. See GUILD.

GILDING. The art of covering the surface of bodies with gold.

GILLIFLOWER, or JULY FLOWER. A smaller kind of carnation that flowers in July.

GIMLET. A carpenter's tool for boring holes.

GIN, or GENEVA. A hot fiery spirit, formerly drawn from the berries of the genevre or juniper tree, but now made by the distillers of the oil of turpentine and malt spirits. The Hollands Geneva is manufactured chiefly at a village near Rotterdam, and is drawn from wheat and the juniper berries. The English gin is a destructive drink among the lower orders.

GIN (among Sportsmen). A machine which serves as a trap or snare for catching beasts.

GIN (among Mechanics) A machine for driving piles.

GINGER. An Indian root of a biting hot taste; the flower consists of five petals, shaped something like those of the iris.

GIPSIES. A wandering tribe, who are to be found in different countries of Europe, and are supposed to be of Egyptian origin. They are altogether a distinct class of people, both in their habits, which are predatory and uncivilized; and in their complexion, which is sallow and brownish. But they are now beginning to follow the occupations of civilized life, and in winter to reside in towns, where they occasionally send their children to school

GIRAFFE. See CAMELOPARD.

GIRDERS (in Architecture). Some of the largest pieces of timber in a floor.

GIRT. The circumference of a tree.

GLACIERS. A name in Switzerland for the extensive tracts of ice and snow which occur in the Alps.

GLACIS (in Fortification). A mass of earth serving as a parapet to the covered way.

GLADIATORS. Persons who fought in the arena at Rome for the amusement of the people. These were usually slaves, who fought until one was killed. This cruel custom was abolished by Constantine the Great.

GLANDS. A sort of kernels in the animal body, which serve to secrete the fluids. They are composed of blood vessels, nerves, and absorbents.

GLANDERS. A virulent disease in horses, which shows itself by a discharge of mucus from the nostrils.

GLASIER. See GLAZIER.

GLASS. An artificial substance formed by the action of fire on sand, or siliceous earth with salts and metallic oxides. It is remarkable for its brittleness and transparency, which latter quality renders it available for many purposes of domestic use. There are five kinds of glass, namely, flint glass, or glass of lead; plate glass, or glass of pure soda; crown glass, the best window glass; broad glass, a coarse window glass; and bottle glass, a coarse green glass.

GLASS (among Mariners). Sometimes the telescope, and sometimes the hourglass or sand glass.

GLASSBLOWER. One who blows glass in a glasshouse.

GLASSHOUSE. A house where glass is manufactured.

GLAUBERS SALTS. The sulphate of soda; a purgative.

GLAZIER. One who works with glass or makes glass windows The company of glaziers in London, were incorporated in the reign of Elizabeth.

GLAZING. The crusting over earthenware with a vitreous substance; also the putting glass into windows, or making glass lights for windows.

GLEANING. Picking up the scattered ears of wheat after the wheat is cut and carried. It was once thought in England, that, by the common law, the poor might claim this liberty as their right; but it has been adjudged by a solemn judgment of the Court of Common Pleas, that no such right exists by the common law of the land.

GLEBE LAND. In England, a portion of land belonging to a parsonage or vicarage.

GLEE (in Music). A composition of three or more parts; originally used for convivial purposes.

GLIRES. The fourth order of the class mammalia in the Linnæan system, including such animals as have two fore teeth, a cutting one in each jaw, no tusks, and feet with claws formed for running, as the beaver, the hare, &c

GLOBE (in Geometry). A round spherical body, more commonly called a sphere as the armillary sphere

GLOBE (in Astronomy). An artificial sphere, or a round solid body, on which is drawn a representation of the earth, as on the terrestrial globe; or of the heavens, as on the celestial globe.

GLOBULES. Little globes or round bodies observable in fluids.

GLOSSARY. A vocabulary or small dictionary,

GLUCIC ACID. An acid obtained from the solution of grape-sugar, saturated with baryta or lime.

GLUCINA, or GLUCINE. The oxide of glucinium, a white powder, so named from the sweetness of its salts.

GLUCINIUM. A metal in the form of a greyish-black powder, which acquires a dark metallic lustre by burnishing.

GLUCOSE. A sugar obtained from grapes, honey, and most acid fruits; a potato-starch, used instead of gum-arabic, for dressing, in the process of weaving and printing woollens, silks, or cottons; also used for the glazing of paper, stiffening gauzes, &c.

GLUE. An inspissated jelly, made from the parings of hides and other offals, by boiling them in water, then straining off the impurities, and boiling them again.

GLUME (in Botany). The calyx or corolla of grasses.

GLUTEN. An adhesive, tenacious, and elastic substance, similar to glue, which is procured by the decomposition of wheat flour, or other vegetable substances, o which it forms a part

GLUTTON. A cunning voracious animal, larger than a badger, which inhabits Europe, Asia, and America, and preys on the carcasses of hares, mice, &c

GNAT. An active little insect, which lives by sucking the blood of other animals

GNEISS. A sort of rock that lies immediately over granite.

GNOMON (in Dialling). The stile or pin of a dial, the shadow of which points out the hours.

GNOMON (in Astronomy). An instrument or apparatus for measuring altitudes.

GNOMON (in Geometry). A figure formed by the two complements with either of the parallelograms about the diameter.

GNU. A particular kind of antelope, having horns bent forward at the base and backward in the middle.

GOAD. A staff pointed with a sharp iron for driving cattle.

GOAT. A quadruped fond of dry, rocky situations, and feeding on aromatic vegetables. The varieties of the goat are distinguished principally by their horns.

GOAT-SUCKER. An American bird, so called because it was supposed to suck the teats of the goats.

GODFATHER. One who stands sponsor for a child in baptism.

GODWIT. A bird resembling the Plover, that feeds on worms on the sea shore.

GOLD. The richest and heaviest metal except platina, being the most solid and the least porous. The ductility and malleability of gold is such, that one grain of it will cover upwards of fifty square inches, and an ounce is capable of being extended in the form of wire many hundred miles. Gold is found in beds of quartz, sand stone, &c. and also in many rivers, particularly in Peru, in minute and irregular grains, which are known by the name of gold dust.

GOLDBEATERS SKIN. The skin or membrane of any animal, which is used by the goldbeaters in preparing gold leaf.

GOLDEN NUMBER. A number beginning with one and increasing one every year till it comes to nineteen, when it begins with one again, and is used to show what year in the lunar cycle any given year is.

GOLDEN ROD. A plant which is for the most part a native of North America. Two species only are found in Europe.

GOLDEN RULE. A name given to the Rule of Three.

GOLDFINCH. A beautiful European bird with a fine yellow mark in its black quill feathers. It sings very charmingly and is very docile. See YELLOW BIRD.

GOLD FISH. An elegant fish of a gold colour, originally brought from China, and now kept by way of ornament.

GOLD LEAF, or LEAF GOLD Gold that is hammered by the beaters, until it becomes as thin and extended as a leaf.

GOLDSMITH. A worker or seller of gold or silver vessels. The company of goldsmiths in London, were incorporated in the reign of Richard II.

GONDOLA. A sort of Venetian pleasure barge.

GONG (in Music). A Chinese instrument, the form of which is a shallow circular concave.

GOODS (in Law). The valuables of which a man is possessed.

GOOSANDER. A water bird, the size of a goose.

GOOSE. A well known domestic fowl, which exists in a wild as well as a tame state. The gray lay goose, or common wild goose, is easily tamed: from this sort has sprung the domestic breed.

GOOSEBERRY (in Botany). A plant that is set with prickles, and yields a fruit of an oval and globular figure, containing many small seeds in a pulpy substance It is a bush much cultivated in gardens.

GORGE (in Fortification). The entrance of a bastion, ravelin, or other outwork.

GORGET. A piece of armour round the neck; something similar is now worn by officers on duty by way of ornament.

GOSHAWK. That species of hawk which was formerly much used in falconry.

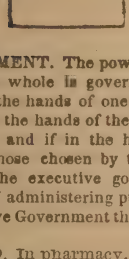
GOSPEL. The four books in the New Testament written by the Evangelists, St. Matthew, St. Mark, St. Luke, and St John.

GOSSAMER. A fine filmy substance like a cobweb, which is seen in clear days in autumn in stubble fields, and is probably worked by spiders for catching flies.

GOTHIC STYLE. A style of architecture in which pointed arches of greater height than breadth, and a profusion of ornaments, in imitation of leaves and

flowers, are the principal characteristics.

GOTHIC ARCH. An arch called by the Italians arche de terze et di quarte acute, i. e. of the third and fourth point, consisting of two arcs of a circle meeting in an angle at the top.



GOVERNMENT. The power in a state by which the whole is governed; if this power be in the hands of one it is a Monarchy; if in the hands of the nobility, an Aristocracy; and if in the hands of the people, or those chosen by them, a Democracy. The executive government is the power of administering public affairs, the Legislative Government that of making the laws.

GOULARD. In pharmacy, an extract of sugar of lead, used for inflammations.

GOVERNOR. In mechanical science, a contrivance for maintaining uniform velocity with varying resistance.

GOWAN. In geology, decomposed granite.

GOWT, or GOOUT. In engineering, a sluice used in embankments for letting out water.

GRACE NOTE. In music, any note added as an ornamental flourish.

GRADDO. In music, a word applied to the notes moving by conjoint intervals.

GRADIENT. The proportionate ascent or descent of the several planes on a railroad; thus, an inclined plane 2 miles in length, with a total fall of 18 feet, is described as having a gradient of 9 feet per mile.

GRADUATE. In literature and the arts, one who has received a degree in a college or university, or from some professional incorporated society.

GRADUATION. Regular progression; act of graduating.

GRADUATOR. In physics, a contrivance for accelerating spontaneous evaporation; also an instrument for dividing any right line or curve into equal portions.

GRAB. A vessel used on the Malabar coast, having two or three masts.

GRACES. In mythology, three beautiful goddesses, Aglaia, Thalia, and Euphrosyne, who attended upon Venus. In music, ornamental notes attached to principal ones.

GRADUATION. Dividing any thing into equal parts or degrees.

GRAFTING (in Horticulture). The process of inserting a branch of one tree, into the stock of another, so that it may receive nourishment from it, while at the same time it produces a new tree, like the old one whence the graft was taken.

GRAFTING-TOOL. A kind of curved spade fit for cutting trenches.

GRAIN. A general name for all kinds of seed corn.

GRAIN (in Commerce). A small weight the twentieth part of a scruple in Apothecaries weight, and twenty-fourth in Troy weight.

GRAIN (in Mineralogy). The veins of wood, or the component particles of stone and metals as they are disposed in the mass, &c.

GRAINS OF PARADISE. The seeds of the ammonium, which have a pungent taste like pepper.

GRAIN TREE. The cochineal tree.

GRAKLE. A bird not inhabiting Europe, having a thick bill and sharp hooked claws

GRALLÆ. An order of birds in the Linnæan system, with obtuse bills and long legs, as the crane, snipe, stork, and ostrich.

GRAMINA. Grasses; the fifth family in the Linnæan system, comprehending among the species the ray grass, clover, trefoil, sanfoin, lucern, &c. which are called artificial grasses, as distinguished from the meadow grass.

GRAMMAR. The art of speaking and writing truly, according to the rules established by custom and the authority of good writers. Universal Grammar is that which treats of the first principles or elements of language, which are founded on logic; Particular Grammar is the grammar of each language, containing not only the general principles of grammar, but also the peculiarities in the structure of each language.

Grammar is divided into four parts, namely, 1. Orthography, or the right mode of writing and spelling, which treats of letters, their powers, different offices, and divisions into vowels, consonants, diphthongs, mutes, liquids, syllables, words, &c together with punctuation, or the right mode of distinguishing words, &c. by points or accents, &c. 2. Etymology, which treats of the formation or derivation of words from one another, and their distribution into the several parts of speech, according to their several offices, into nouns, adjectives, pronouns, verbs, adverbs, prepositions, conjunctions and interjections. By

mology also treats of the several inflections to express number, gender, case, mood, tense, person, &c. Sometimes etymology treats of the derivation of words of one language from those of another, which is called remote etymology. 3. Syntax treats of words as they are connected with or dependant on each other, giving rules for the right construction and disposition of words in a sentence. 4. Prosody treats of the quantities and accents of syllables as parts of a verse, and the right rules of versification.

GRAMMAR, History of. Grammar, as a practical art, must have existed long before it was considered as a science, and the rules of grammar must have been formed after language had assumed a settled shape by the practice of good writers. The works of Homer contained a practical illustration of all the rules of the Greek grammar long before the subject of grammar excited any attention. It is likewise clear that as there is a close connexion between correctness of thinking and correctness of speaking, the study of logic preceded that of grammar; hence we find that Aristotle makes a logical distinction between words denoting time and words not denoting time, the former of which he denominates by a word answering to the verb in grammar, and the latter by a word answering to the noun. But although the Greeks, particularly the Athenians, cultivated their language for purposes of oratory, yet there appears to have been no particular advances made towards bringing it under grammatical rules. They seem to have studied their language by the ear, which was so universally nice that a herb woman at Athens is said to have distinguished Theophrastus to be a stranger from the affectation of a single word in expressing himself; and for the same reason the orators were careful not to let a single injudicious expression escape them which might offend the audience. We are likewise informed that it was a common thing for the young people to get the tragedies of their favourite authors by heart, which they would recite on various occasions. When the Athenians, after their defeat at Syracuse, were made slaves, they softened their slavery by reciting the works of Euripides to their masters, who treated them the better on that account. In this manner the Grecian youth were taught their language at school, where a Homer was looked upon as indispensable. To a light minded people, like the Athenians, this mode of learning a language would be far more agreeable than the dry method of studying grammar; but as this former course was not so practicable in the acquiring a foreign language, this is probably the reason why grammar seems first to have been cultivated among the Romans, who, being studious of the Greek, were naturally led to a comparison of languages, and to a logical and abstract consideration of language in general. Certain it is, that the study of grammar commenced with the Romans, and that the names of all the parts of speech are Latin, and to be found in the writings of authors subsequent to the age of Varro and Cicero, as Ælius Dionysius, Julius Pollux, Valerius Probus, Herodian, Suetonius, Charisius, Macrobins, Diomedes, Augustin, Priscian, Ælius Donatus, &c.

GRAMMARIAN. One who is skilled in grammar learning.

GRAMMAR SCHOOL. A school in which the learned languages are grammatically taught.

GRAMME. A small French weight

GRANARY. A storehouse for threshed corn.

GRAND JURY (in Law). The jury which find bills of indictment against offenders, who are afterwards tried before a petty jury, in case the former find a true bill against the party accused.

GRAND SEIGNIOR. The title of the Turkish sultan.

GRANITE. A compound rock, consisting of quartz, felspar, and mica, crystallized and cohering without cement. Granite is hard, and admits of an elegant polish.

GRANT (in Law). A gift in writing, of such things as cannot conveniently be passed, or conveyed by word of mouth.

GRANULATION (in Chemistry). Pouring melted metals into cold water, that they may divide themselves into grains.

GRAPE. The fruit of the vine, growing in clusters, from which wine is expressed. Grapes are found by a chemical analysis to contain supertartrate of potash, tartaric acid, citric and malic acids, abundance of sugar, a portion of mucilage jelly, some albumen, and also, as is said, some gluten.

GRAPESHOT (in Artillery). A combination of small shot, put into a thick canvass bag, and corded so as to form a kind of cylinder.

GRASSES. See Gramina.

GRASSHOPPER. An insect that hops in the summer grass: it is allied to the locust in its make, but is very harmless.

GRAVEL. A kind of loamy sand mixed

with pebbles, which adhere so as to form a solid handsome path.

GRAVER. A tool used in engraving.

GRAVE SOUND A low deep note.

GRAVIMETER. An instrument for measuring the specific gravities of bodies.

GRAVITATION. The pressure that a body, by the force of its gravity, exerts on another body under it.

GRAVITY. The force by which bodies are carried or tend towards the centre of the earth.

GREEK FIRE. An artificial fire invented by the Greeks in the middle ages, during their wars with the Arabs and Turks. It consists of naphtha, bitumen, sulphur, gum, &c.

GREENBACK. The popular name given to the notes issued by the U. S. Government, first issued in 1862. They derived their name from the green color predominating in them.

GREENSAND. In geology, arenaceous beds of the tertiary formation of the cretaceous system, so termed from its abounding with small grains of chlorite.

GREENSTONE. In mineralogy, a variety of trap; an igneous rock in which felspar is combined with augite or hornblende. It sometimes occurs of great extent and thickness.

GREENSHANK. A sort of snipe.

GREGORIAN STYLE, or the NEW STYLE (in Chronology). A new account of time, according to the improved Calendar made by order of Pope Gregory XIII.

GRENADE. A hollow globe of iron, filled with combustibles, and thrown out of a mortar.

GRENADIERS. Foot soldiers, selected for their stature, being the tallest and stoutest men in the army.

GREYHOUND. A slender dog, fitted

for running with great swiftness, who is employed mostly in coursing hares.

GREYSQUIRREL. A beautiful squirrel common in America.

GREYWACKE. A mountain formation, consisting mostly of a sort of slate.

GRIDIRON. A utensil for broiling meat.

GRINDERS. The large teeth which serve best for grinding the food.

GRIST. Corn ground

GRIT. The smallest particles of sand, also the coarser parts of meal.

GROAT. In England, a silver coin, first struck in the reign of Edward I. It has since been used as a money of account equal to four pence or 8 censt.

GROCER. One who sells tea, sugar plums, spices, &c. The company of grocers in London, were incorporated in 1344.

GROOM. A servant who looks after horses.

GROOM OF THE STOLE. In England an officer of the court, who has the charge of the king's wardrobe.

GROOVE. A hollow channel cut with a tool

GROSS-BEAK. A bird with a stout bill, and of a fiery red colour, except round the bill and on the throat, which is black It is to be met with in North America, and is called the Virginia nightingale, on account of the fineness of its song.

GROSS WEIGHT. The weight of goods together with the cask or vessel.

GROT, or GROTTO. A hollow under ground; also an artificial hollow made in a garden.

GROTESQUE (in Painting and Sculp

ture). A work or composition in the grotesque or wild taste.

GROVE. A small wood or place set with trees

GROUND (in Husbandry). Any piece of land in cultivation, or set apart for cultivation.

GROUND (in Architecture). The ground plot, or piece of ground selected for a building.

GROUND (in Military Tactics) The field or place for action.

GROUND (in Painting). The surface on which the figures and objects are raised and represented.

GROUND (in Music). The plain song or tune in which the descents are raised.

GROUND (among Mariners). The place where the anchor is fixed.

GROUNDASH. A sapling of ash taken from the ground, in distinction from a branch cut from a tree.

GROUNDIVY. A herb, the shoots of which trail upon the ground, and take root at their different joints.

GROUNDLING. A fish, so called because it keeps under stones in small brooks.

GROUND-PINE. A plant, the smell of which resembles resin. It grows on dry and barren hills, and on the ditchbanks by the roadside.

GROUNDSILL. The lowest horizontal timber on which the exterior wall is erected.

GROUND-SQUIRREL. See CHIP-SQUIRREL.

GROUP (in Painting). An assemblage of figures, appearing to have a connexion with each other.

GROUPING (among Painters). Putting figures together in groups.

GROUSE. A bird larger than a partridge, living in the mountainous parts of Europe and Asia. The American partridge is properly the ruffed Grouse.

GRUB. The worm or maggot produced from the beetle, which afterwards becomes a winged insect.

GRUINALES. One of Linnæus's natural orders of plants, containing the geraniums, flax, lignum vitæ, &c.

GRUS. One of Bayer's constellations.

GUIACUM. A resinous substance procured from a tree of the same name in the West Indies.

GUARANTEE (in Diplomacy). A prince or power appointed by the stipulating powers, to see that the articles of any treaty or agreement are performed on each side.

GUARD. The duty of guarding or defending any post or person from an attack or surprise; also the soldiers who do this duty.

GUARD (in Fencing). A posture or action proper to defend the body.

GUARDBOAT (in Naval Tactics). A boat appointed to row among ships of war, to see that the officers keep a good look out.

GUARDIAN. One who has the charge of a person committed to him; as the guardian of an infant, who sees to his education and manages his affairs, &c.

GUARDSHIP. A vessel appointed to superintend the marine affairs in a harbour or river.

GUDGEON. A fresh water fish, of the carp kind, the flesh of which is very delicate.

GUIDE (among Travellers). One who accompanies another in order to show him the way.

GUIDE (in Music). The leading note in a figure.

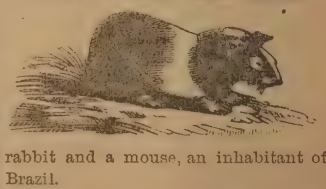
GUILD (in England). A company or incorporated society.

GUILDHALL (in London). The common hall of the guilds or companies, which was built in 1411, by Thomas Knolls, then mayor.

GUILLOTINE. A machine for beheading, first invented by a Scotchman and now used in France. It was introduced during the revolution.

GUINEA HEN or PINTANO. An African bird domesticated in Europe, which makes a harsh unpleasant cry.

GUINEA PIG. An animal betwixt a rabbit and a mouse, an inhabitant of Brazil.

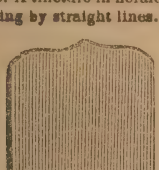


GUINEA. An English gold coin, in

coined in the reign of Charles II. and till lately current for 21*s*. It was so called because it was made from the gold that was brought from Guinea, on the coast of Africa.

GUITAR. A musical stringed instrument, rather larger than a violin, and played with the fingers.

GULES. A tincture in heraldry, marked in engraving by straight lines.



GULF. A part of the sea running in land, as the Gulf of Mexico.

GULL. A species of sea bird, of which there are many varieties.

GUM. A concreted vegetable juice, which exudes through the bark of trees. A gum, properly speaking, is that only among chemists which is soluble in water; that which is insoluble in water is a gum resin. The gum arabic flows from the acacia, in Africa and Arabia; gum lac is the juice of the croton lacifera; gum ammoniac was first drawn from ammonia.

GUMS. The vascular and elastic substance that covers the arches of the upper and under jaws, embracing the roots of the teeth.

GUM-TREE. The popular name of the black gum, of the genus nyssa, one of the largest trees of the Southern States of America.

GUMLAC. The resinous produce of an insect, which deposits its eggs on the branches of a tree called bihar.

GUNNY. A coarse sackcloth manufactured in Bengal, of which bags are made for containing salt and other articles.

GUN. In military science, a general term for all species of fire-arms, as muskets, rifles, carbines, ordnances, &c. the principal of which are the Muzzle-loading and Breech-loading guns, the latter comprehending the Needle-Gun (which see). Gunpowder is a mixture of 5 parts of nitre, 1 of sulphur, and 5 of charcoal, finely powdered and very accurately blended. Gun-cotton is a preparation of cotton by steeping it in nitric or nitro-sulphuric acid, and afterwards washing it, by which it acquires the explosive properties of gunpowder. Gun barrel, the metallic tube of a gun. Gun-boat, a boat for carrying cannon. Gun-lock, the lock of a gun. Gun-metal, an alloy of copper and tin.

GUNPOWDER-PLOT (in England.) The plot or conspiracy in which Guy Fawx was the principal agent, to blow up the parliament house, by means of gunpowder placed underneath, which was to have been set fire to when King James I was assembled with his parliament; also the anniversary of that day, namely, the fifth of November, when this plot was discovered.

GUNSHOT. The reach or range of a gun.

GUNSTOCK. The wood to which the barrel of a gun is fixed.

GUNTER'S CHAIN. The chain commonly used in measuring or surveying land, so called from Mr. Gunter, the inventor. The chain is 66 feet in length, and is divided into 100 links of 7.92 inches each, consequently an acre of land is equal to 10 square chains.

GUNTER'S LINE. A logarithmic line, usually graduated upon scales, sectors, &c.

GUNWALE or GUNNEL. The uppermost wale of a ship.

GUST (among Mariners). A sudden and violent squall of wind.

GUTTA SERENA. A disease in the eye, which deprives the patient of his sight.

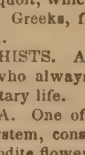
GUTTURAL LETTERS. Letters which are pronounced with the throat.

GYMNASIUM. A place among the ancients where the youth were trained in gymnastic exercises; also a public school of learning, in which latter sense, it is now frequently employed.

GYMNASTICS. Athletic exercises, such as wrestling, leaping, running, and throwing the dart or quoit, which were much in use among the Greeks, from whom the word is derived.

GYMNOSOPHISTS. A sect of Indian philosophers, who always went naked, and lived a solitary life.

GYNANDRIA. One of the classes in the Linnæan system, consisting of plants with hermaphrodite flowers, in which the stamina are placed on the style



GYPSUM. A sort of calcareous earth, consisting of sulphate of lime. When highly burnt it falls into powder, from which plaster of Paris is made

# H.

H, the eighth letter of the alphabet, formerly stood as a numeral for 200, with a dash over it for 20,000; in Heraldry, it stands for the middle base, a point in the escutcheon; as an abbreviation, for hour.

HAARTE BESTE. A variety of the African Antelope.

HABEAS CORPUS. In England, a writ which may be made use of by the courts at Westminster for removing prisoners to answer any cause, as a Habeas Corpus ad respondendum, ad satisfaciendum, &c.; but the most celebrated writ of this kind is that of Habeas Corpus ad subjiciendum, which a man who is, or supposes himself to be aggrieved by an unlawful imprisonment, may have out of the King's Bench, directed to the person detaining him, and commanding him to produce the body of the prisoner, to submit to or receive whatever the court shall consider in that behalf. This writ was founded on the common law, and secured by many statutes, particularly that of the 31 Chas. II. which is by distinction called the Habeas Corpus Act. The writ of Habeas Corpus in the United States is that, by which a man in prison may claim an immediate trial, or examination.

HABERDASHER. A dealer in small wares, as tape, thread, pins, needles, &c. The company of haberdashers in London was incorporated in 1447.

HADDOCK. A fish of the cod kind, which inhabits the northern coast.

HADLEY'S QUADRANT. A quadrant that is particularly used for taking altitudes at sea

HÆMORRHAGE. A flux of blood from any part of the body

HAIL. A meteor, which consists of frozen rain, or drops of rain agglutinated together by the frost, so as to form little pieces of ice, called hailstones

HAILING (among Mariners). Saluting or accosting a ship at a distance

HAIR. Small filaments issuing out of the pores of the skin of animals, and serving for the most part as a covering. The principal constituent parts of hair are animal matter, oil, silex, sulphur, carbonate of lime, &c.

HAIR (in Botany). The down, or hair-like threads on the surface of plants

HAIR GRASS. A plant, some species of which are perennials and some annuals

HAIR'S BREADTH. A measure of length, equal to the forty-eighth part of an inch.

HALBERT. A weapon something like a spear, formerly carried by the serjeants of foot and artillery.

HALCYON. A name for the kingfisher

HALF-BLOOD (in Law). Relationship by the father's or the mother's side only.

HALF-MOON (in Fortification). An outwork having two faces.

HALFPENNY. An English copper coin of the value of one cent.

HALL. A public edifice, a court of justice.

HALL (in Architecture). A large room at the entrance of a fine house

HALLELUJAH. A part of church music in which these words are repeated.

HALLIARDS Ropes for hoisting up the yards.

HALLOO. A hunter's cry after the dogs.

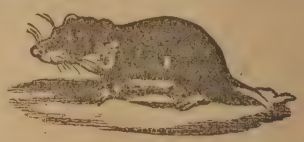
HALLUCINATION. An affection either in the senses or the imagination, which causes a person to feel, see, or hear what does not exist.

HALM. In England, the stalk of corn which is left on the ground when it is cut.

HALO. A meteor, in the form of a luminous ring or circle, appearing round the bodies of the sun, moon, or stars.

HAMMOCK (among Mariners). A piece of hempen cloth, six feet long and three feet wide.

HAMSTER. An animal of the mouse tribe, entirely black, except at the tip of the nose, edges of the ears, feet, and sometimes the tail, which are white.



HANAPER OFFICE. In England, an office in the Court of Chancery, out of which issue all original writs.

HAND (in the Manege). The fist clenched or a measure of three inches, by which the height of a horse is computed; also the parts of a horse, as the forehand, for the head, neck, and fore quarters; the hind hand, which includes the rest; and also the horseman's hand, as the spur hand,

which is his right hand; and the bridle hand, which is his left hand.

HAND. An important member of the body, which consists of the carpus, or wrist; the metacarpus, or the four bones within the palm and the fingers.

HAND (among Watchmakers). The index of a clock or watch.

HAND-BARROW. A barrow without wheels.

HANDCUFFS. Two circular pieces of iron locked over the wrists of a prisoner to prevent him using his hands.

HANDSPIKES. Wooden levers used at sea.

HANGINGS Tapestry hung or fastened against the wall.

HANSE TOWNS. Port towns of Germany, which were incorporated for the purpose of protecting their trade. The three principal of these towns were Hamburgh, Bremen, and Lubec, which still retain the name.

HARBOUR. A place where ships may ride in safety.

HARDNESS (in Physiology). The resistance opposed by a body to the separation of its parts.

HARE. A timid animal of exquisite sight and hearing, with a short tail. It is in Europe a beast of chase, and is sometimes pursued by greyhounds in open ground, which is called coursing; and sometimes by harriers, or hare hounds, which is called hare hunting. Shooting of hares is not lawful in England. A species of hare common in America, passes under the name of rabbit.

HARELIP A lip cloven or parted like that of a hare

HARMATTUN. A wind which blows periodically from the interior parts of Africa towards the Atlantic. This wind is remarkable for its dry and parching character.

HARMONICA. A musical instrument constructed with drinking glasses.

HARMONICS. That branch of music which considers the differences and proportions of sounds.

HARMONY (in Music). The agreeable result or union of several musical sounds heard at one and the same time. Melody is produced by a succession of musical sounds, as harmony is produced by their combination.

HARMONY OF THE SPHERES. A kind of music, supposed by the ancients to be produced by the accordant motions of the stars and planets.

HARP. A musical stringed instrument of great antiquity, of a triangular form, and played with the fingers.

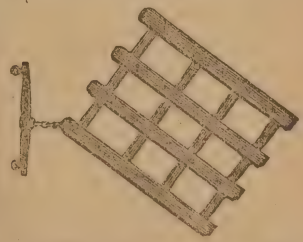
HARPER. One who plays upon the harp

HARPINS (among Mariners). The breadth of a ship at the bow.

HARPOONS, or Harping Irons. Irons formed at one end like a barbed arrow, and having a rope at the other, for the purpose of spearing the whale.

HARPSICHORD. A stringed and keyed instrument in a mahogany case.

HARROW. A drag with iron teeth, to break the clods after ploughing.



HARPY A fabulous monster, with the head of a woman, the wings of a bird, and the tail of a beast

HARPALIDÆ. In entomology, an extensive family of coleopterous insects, of which the Harpalus is the type.

HARTALL. Orpiment, an oxide of arsenic, used as a yellow paint.

HARTSHORN. In pharmacy, the horn of the common stag, which obtains a place in the pharmacopœia because it contains less earthy matter and more gelatine than other bones.

HATCHETINE. A bituminous mineral or mountain-tallow, found at Merthyr Tydvil, in S. Wales.

HARUSPICE. In Roman history, a person who pretended to foretell future events by the entrails of beasts.

HATCHING. The act of maturing fecundated eggs, so that they should produce young birds. This is commonly done by the incubation of the mother; but sometimes by means of artificial heat in ovens, as is practised in Egypt.

HATCHMENT. See ACHIEVEMENT.

HATCHWAY (among Mariners). An opening in the deck, to serve as a passage from one deck to another.

HATTER. A manufacturer and seller of hats. The company of hatters, or hatmakers in London, is very ancient.

HAVERSACK. A kind of bag of strong coarse linen, to carry bread and provisions on a march.

HAUL, or YAUL (among Ropemakers). A yarn of four hundred threads.

HAUNCH. The hind part of a stag, or of a horse, &c.

HAUNT. The walk of a deer.

HAUTBOY. A musical wind instrument, shaped much like the flute, only that it spreads and wids as at the bottom, and is sounded through a reed at one end.

HAWFINCH. A sort of finch, so called because it feeds on haws and cherries.

HAWK. A bird of prey of the eagle and falcon tribe, the two principal species of which are the sparrowhawk and the goshawk, both used formerly in falconry.

HAWKERS. In England, itinerant petty chapmen, who go with their goods from town to town and from house to house. They are obliged by law to have a license.

HAWKING. The ancient sport of fowling with hawks.

HAWKING (in Trade) The going about with commodities to sell, after the manner of a hawker.

HAWK'S BELL. The bell put about the feet of a hawk.

HAWKWEED. A plant which bears a flower in the form of a marigold. The whole plant has a milky juice.

HAWSE. A sea term, for the situation of the cables before the ship's stern, when she is moored with two anchors out from the bows, as 'a clear or open hawse,' 'a foul hawse,' &c

HAWSER. A small cable.

HAZARD. A game of chance, played much by gamesters and gamblers.

HAZLE NUT. A shrub having male flowers growing at remote distances from the fruit on the same tree. The nuts grow in clusters, and are of three kinds, the common hazel nut, the cob nut, and the filbert, which latter are the most esteemed.

HEAD (in Anatomy). The superior part of the body, placed on the neck, and consisting externally of the face and the hairy scalp; internally, of the brain and the medulla oblongata.

HEAD (among Mechanics). The upper and more solid part of inanimate bodies, as the head of a nail, the head of a gate, the head of a hammer.

HEAD (in Painting). The representation of the head of a person.

HEAD (in Architecture). An ornament of sculpture or carved work.

HEAD (in Gunnery). The fore part of the cheeks of a gun.

HEAD (in Printing). In England, the top of a page.

HEADBOROUGH. Formerly the chief of a borough, or frankpledge; now a sort of petty constable.

HEADER (in Masonry). A name for the bricks which are inserted lengthwise in the thickness of a wall.

HEADLAND. A point of land lying farther out at sea than the rest.

HEADSTALL. That part of a bridle that goes about the head; also a kind of halter.

HEALING (in Surgery). Curing a wound.

HEALING (among Bricklayers). The covering a roof with any thing, as lead, slates, &c.

HEARING. One of the five senses, of which the ear is the organ, with the help of the auditory nerves and membrane.

HEARSE. A close carriage for conveying dead bodies.

HEART. The seat of life in the animal body, is situated in the thorax, and divided externally into the base, which is the broad part; the superior and inferior surface and the anterior and posterior margin Internally, it is divided into two ventricles, right and left.

HEARTBURN. A burning pain in the stomach.

HEAT, in physiology, the sensation caused by a hot body, or the cause of that sensation. In chemistry, the supposed matter or cause of heat, termed *caloric*, which, if material, is an imponderable subtile fluid, the particles of which repel each other, and are attracted by all other substances, either by direct contact or radiation. Animal heat, is the heat consequent on respiration and digestion in the bodies of animals, produced in the system of each by the oxygen of the atmosphere combining with the carbon of the blood, and forming carbonic acid gas. In mechanics, the term is applied to that degree of heat which is required for iron-work, namely, the blood-red heat, the smallest degree: the flame, or white heat, the second degree: and the sparkling, or welding heat, which is the strongest degree.

HEBE, the name of one of the newly-discovered planets, first observed by Hencke in 1847. Its mean distance from the sun is 231,350,000 miles: and the time of its periodical revolution is 3 years and 284 days. In natural history, the word *hebe* frequently occurs in the definition of species, and signifies *pubescence*; as, *hebeanthus*, having pubescent or downy flowers: *hebecarpus*, having downy seeds: *hebecladus*, having downy branches: *hebegynus*, having the ovary pubescent: *hebepetalus*, having downy petals.

HECTARE, a French measure consisting of 10,000 square metres, or 11960·33 English square yards.

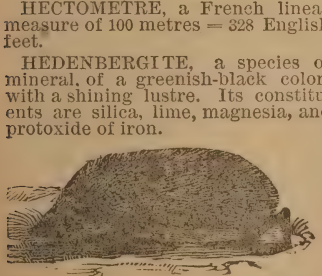
HECTIC, a form of fever arising from local irritation in a feeble constitution.

HECTOGRAMME, a French weight of 100 grammes = 3·2 ounces troy.

HECTOLITRE, a French measure of capacity, containing 100 litres = 22 English imperial gallons.

HECTOMETRE, a French linear measure of 100 metres = 328 English feet.

HEDENBERGITE, a species of mineral, of a greenish-black color, with a shining lustre. Its constituents are silica, lime, magnesia, and protoxide of iron.



HEDGEHOG, a small quadruped, covered on the upper part with prickles or spines.

HEDYPHANE, a white or greyish mineral, consisting of oxide of lead and lime.

HELIAC, or HELIACAL. In astron. a star is said to rise heliacally when, after being in conjunction with the sun, it rises so as to be visible.

HELICOID, in geometry, a parabolic spiral or curve line.

HELICOMETRY. In geometry the art of measuring spiral lines on a plane.

HELIOCENTRIC. In astronomy, relating to the sun's centre. Heliocentric longitude is the angle formed at the sun's centre by the projection of the radius vector of a planet on the ecliptic, with a line drawn from the sun's centre to the first point of Aries.

HELIOCHROMY. The process by which photographic pictures in their natural colours are obtained.

HELIOGRAPHY. A description of the sun.

HELIOMETER. A micrometer for measuring the diameters of the sun, moon, and planets.

HELIOSCOPE. A telescope for making observations of the sun without dazzling the eyes.

HELIOSTAT. An instrument used to fix the positon of the solar rays.

HELIOTROPE. In mineralogy, a deep green, siliceous mineral, with red spots.—In astronomy, an instrument to reflect light.—In botany, a plant that turns toward the sun: the Turnsole.

HELISPHERIC. Winding spirally round the pole of the sphere; noting the rhumb line in navigation.

HELIX. A spiral line; the smaller scroll of volute in a Corinthian capital.

HEMATHERMS. A name given to animals possessed of warm blood.

HEMATINE. The colouring principle of logwood.

HEMATITE. The blood-stone; a kind of ironstone; a native of oxide of iron.

HEMATOLOGY. Science of the blood.

HEMERALOPIA. A disease which prevents distinct vision in broad daylight.

HEMERAPATHIA. Certain states of disease or affections which are observed only by day, or which last only one day.

HEMI. A Greek prefix signifying half, equivalent to demi and semi; frequently used as a prefix in composition.

HEMICRANIA. A pain in one side of the forehead.

HEMICYCLE. In architecture, a semicircle used to denote vaults of the cradle form, and arches or sweeps of vaults constituting a semicircle.

HEMIHEDRAL. In mineralogy, a term applied to a crystal with half of the similar edges or angles similarly replaced.

which serves to direct the rudder; and the wheel round which the tiller rope is wound in large vessels.

HELMET. A headpiece, or armour for the head, which was formerly the noblest piece of coat armour.

HELMINTHOLOGY. The science of worms.

HELVE. The handle of an axe

HEM. The edge part of cloth.

HEMIPTERA. The second order of insects in the Linnæan system, including those which have their upper wings semi-crustaceous, as the cock-roach, mantis or walking leaf, locust, cricket, grasshopper, lanthorn-fly, boat-fly, water scorpion, aphis or plant louse, and the coccus or cochineal.

HEMISPHERE. One half of the mundane sphere.

HEMLOCK. A narcotic plant, the leaves of which are cut into many minute segments, like parsley. It is doubtful whether this be the true hemlock of the ancients.

HEMP. A fibrous plant, of which linen and ropes are made.

HEN. A female bird of any species, particularly the domestic fowl.

HENBANE. A poisonous plant that grows in hedges.

HENDECAGON. A figure of eleven sides.

HEPTAGON. A figure of seven sides and seven angles.

HEPTANDRIA. One of the Linnæan classes, including those plants which have seven stamens to the flower, as the horse-chestnut, chickweed, lizard's tail, &c

HEPTARCHY. The seven kingdoms formed by the Saxons on their first settlement in England. They were all united into one kingdom by Egbert.

HERALD (in England). An officer whose business it is to proclaim war and peace, to marshal processions, and regulate armorial ensigns, &c. The heralds are six in number, and are distinguished by the names of Richmond, Lancaster, Chester, Windsor, Somerset, and York. They are all equal in degree, and have precedence only according to the seniority of their creation.

HERALDRY. An ancient art which professed to teach the true use of arms; as how to blazon or describe them in proper terms, and how to marshal or dispose the different arms in an escutcheon or shield.

HERALDRY, History of. Although the science of heraldry, as far as regards the distinctions of families by means of coat armour, is comparatively of modern date, yet the Romans were not without their marks of honour, which, being hereditary, served as a proof of nobility, and a title to a certain rank. This was known among them by the name of jus imaginum, which was the right of having the statues or images of their ancestors; that belonged to those only who were either of patrician rank or had risen to distinction in the state. He who had the privilege of using the statues or images of his ancestors was termed 'nobilis;' he who could only use his own was a 'novus homo,' or an upstart, like one who first procures a coat of arms; and he who had neither his own statues nor those of his ancestors was termed 'ignobilis.' These images or statues were made of wood, brass, marble, and sometimes in waxwork, and were painted, according to the life, with the several emblems of military honour which belonged to the individual. Thus the collar or chain on the statue of Torquatus, and the tuft of hair on that of Cincinnatus, were the trophies of which these brave warriors had despoiled their enemies.

These statues commonly stood in their courts in a cabinet of wood, whence probably originated our cabinets of arms, where the helmet, crest, gauntlet, spurs, banner, &c. were kept; and as, upon particular occasions, these cabinets were set open, and the statues were exposed to public view before the porch or gate of their houses, so our nobility and gentry have their coats of arms cut in stone, and painted in escutcheons over their gates. At their funerals those statues were borne before such as had the jus imaginum, whence in after times it became the practice, at the funerals of great men, to carry their ensigns of nobility, and the arms of those from whom they were descended, which, being all painted, are placed under

the name of an achievement on the house of the person deceased. As a farther proof that our heraldic distinctions take their rise from the jus imaginum of the Romans, it appears that the law of arms among the Europeans in the middle ages was regulated by the civil law.

The introduction of armorial bearings, in place of the images and statues of the Romans is to be ascribed to the northern tribes who overran Europe on the decline and fall of the empire. The Goths, Vandals, and other such people, were in the practice, like their ancestors the Celts and Scythians, of painting on their shields the figures of animals, either for the purpose of rendering themselves formidable, or more probably by way of distinction; and although, from their martial character, their ensigns of honour were at first purely military, yet, by being transmitted to their posterity, they became badges of civil rank and honour; and, in process of time, other circumstances gave rise to bearings which were not purely military. Thus, on the establishment of the feudal system, the tenants of the king, or the great lords, represented on their shields the services they owed to their superiors by way of an acknowledgement of their fidelity, whence originated roses, cinque-foils, spurrowels, bows and arrows, hunting-horns, ships, &c. which are to be found so frequently in coats of arms. So, in like manner, the crusades gave rise to the figures of the cross, which is borne in a diversity of forms; and tournaments, which were introduced by Henry the Fowler in the tenth century, are supposed to have given rise to the fesse, pale, bend, and other ordinaries which represented the fillets or lists of different kinds which were worn by the combatants and those who attended. From the practice and ceremony of the herald's recording the names, arms, and proofs of the nobility of the knights at tournaments, the science of heraldry took its name; and as this ceremony was preceded by the blowing of a horn, blazon, which comes from the German 'blason,' to blow, is now used for a scientific description of coats of arms.

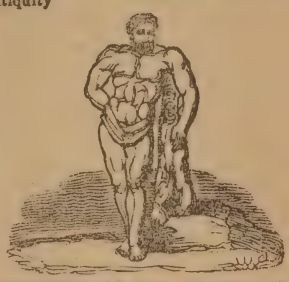
HERB (in Botany). That part of the vegetable which rises from the root, and comprehends the stem and leaves, &c.

HERBÆ. Herbs; the fourth tribe into which Linnæus divided the vegetable kingdom.

HERBAL. A book giving an account of the names, natures, and uses of plants.

HERCULANEUM. An ancient city of Naples, overwhelmed by an eruption of Mount Vesuvius in the reign of Titus: it was discovered in the year 1689, since which time many manuscripts, paintings, statues, and other relics of antiquity, have been discovered by digging.

HERCULES. A celebrated hero of antiquity, the son of Jupiter and Alcmena, who travelled as far as the Straits of Gibraltar, and is said to have erected two pillars, one at Cadiz in Spain, and the other at Ceuta in Africa. His exploits are celebrated by the poets and historians of antiquity



HEREDITAMENTS (in Law). Immoveables, which a man may have to him and his heirs.

HERESY. An error in some fundamental doctrine of the Christian faith, or a private opinion different from that of the orthodox church.

HERETIC. One tainted with heresy.

HERIOT (in England.) The best beast that the tenant died possessed of, which was due to the lord of the manor.

HERON. A bird similar in form to the crane and stork, but much larger, being seven feet in standing.

HERISON. A barrier made of beams stuck with spikes, to block up a passage.

HERMETICAL SEAL (among Chemists). A method of stopping glass vessels so closely that the subtlest spirit cannot escape.

HERNIA. Every kind of rupture, varied according to the part affected.

HEROIC POEM. A poem setting forth the exploits of some hero.

HEROIC VERSE. Hexameter verse, so called because it is used by poets in their heroic poems.

HERRING. A small seafish of a green colour, which inhabits the North seas, and migrates southerly in immense shoals, particularly in the month of June. Their progress is marked by the number of birds which follow them to prey upon them. Those which flock to the British coasts are to be found in the greatest number off Yarmouth, the mart for herrings.

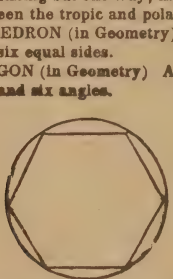
HERSE (in Fortification). An engine like a harrow, stuck full of spikes

HESPERIDÆ (in Botany). A natural order of plants, including the myrtle tribe.

HETEROSCII (in Geography). Those inhabitants of the earth which have their shadows falling but one way, as those living between the tropic and polar circles.

HEXAEDRON (in Geometry). A solid figure of six equal sides.

HEXAGON (in Geometry) A figure of six sides and six angles.



HEXAGYNIA (in Botany). An order of plants, which have six styles in the flowers.

HEXAMETER (in Poetry). A verse consisting of six feet.

HEXANDRIA (in Botany). One of the Linnæan classes, comprehending those plants which have six stamens in each flower, as the pineapple, bamboo, spiderwort, lily of the valley, arrow-grass, &c.

HHD. An abbreviation for hogshead.

HIATUS. A gap or chasm in verses; also any deficiency in a manuscript which destroys the connexion.

HICCOUGH, or HICCUP A convulsive motion of the stomach

HIDE (in Law). A portion of land from 100 to 120 acres.

HIDE (among Tanners). The skins of beasts after they are taken off.

HIDEBOUND (in Farriery). A disease in horses and cattle when the skin cleaves to the sides.

HIDEBOUND (in Botany). A disease in trees when the bark cleaves to the wood.

HIERARCHY. Church government, or the subordination of rank among the different orders of clergy.

HIEROGLYPHICS. Certain characters, figures, or signs, made use of by the Egyptians instead of letters, to express the conceptions of men, particularly the mysteries of their religion. In a general sense an hieroglyphic is any symbol or figure which may serve to represent an object, thus the astronomical characters are many of them of this nature, as the character for Mercury, ☿, which is the figure of his caduceus; that of Mars, ♂, which is supposed to represent his shield and spear; that of Saturn, ♄, which represents his sickle, &c.

HIGHNESS. In Europe, a title of honour given to a prince.

HIGH-WATER. When the tide is at its highest point.

HIGHWAY (in Law). A public or free passage for the people.

HIGHWAYMEN. Robbers on the highways.

HIGLER In England one who buys poultry in the country, and carries them up to town.

HIND. The female of the stag.

HINGE. The iron work on which a door is made to turn.

HIP. The upper part of the thigh.

HIPPOPOTAMUS, or THE RIVER HORSE. An amphibious creature found in the rivers of Africa.

HIP-ROOF (in Architecture). A particular kind of roof, which has neither gable heads, shred heads, nor jerkin heads.

HIPS (in Botany). The ripe fruit of the dog-rose, which is principally made into a sweetmeat.

HISTORY. In its most general sense, an account or description of events and things in an orderly series, comprehending Civil or Political History, Sacred History, Ecclesiastical History, and Natural History; in a particular sense, a narrative of political events in the order of time.

HISTORY (in Painting). A picture composed of diverse figures or persons, representing some transaction.

HITCH (among Mariners). A sort of knot or noose for fastening a rope to any thing.

HIVE. A basket or box, which serves as a receptacle for bees.

H. M. S. In England, an abbreviation for Her Majesty's Ship.

HOBSON'S CHOICE. A by-word, signifying that or none, taken from one Hobson, a livery-stable keeper at Cambridge England, who obliged his customers either to take the horse that stood next the stable door, or to go without.

HODMAN. A bricklayer's labourer.

HOE. A husbandman's tool for cutting up weeds.

HOEING (in Husbandry). The process of clearing the weeds with a hoe, and breaking up the earth on planted ground.

HOG. A domestic quadruped, very voracious and very prolific.

HOGSHEAD (in Commerce). A measure of capacity, containing 63 gallons.

HOLD. The whole interior cavity or belly of the ship, where, in merchantmen, the goods are commonly stowed.

HOLLFAST. An iron hook for fixing any thing to a wall.

HOLERACEÆ. One of Linnæus's natural orders of plants, including shrubs and perennials, as rhubarb, &c.

HOLLOW (in Architecture). A concave moulding.

HOLLY. A prickly shrub which forms an impenetrable hedge. The variegated hollies are remarkable for their beauty; some bear yellow berries, and others white

HOLM-OAK. The evergreen oak.

HOLY GHOST. The third person of the Holy Trinity.

HOMAGE. In England, the oath of submission and loyalty, which the tenant, under the feudal system, used to take to his lord when first admitted to his land.

HOME. A sea phrase for the situation which belongs properly to the tackling or parts of the vessel, as the anchor comes home when it is drawn out of the ground.

HOMICIDE (in Law). The causing the death of a human creature, which is justifiable, if justified by unavoidable necessity; excusable if it happens by misadventure; and felonious if done without excuse.

HOMILY. A plain discourse made to the people, instructing them in matters of religion

HOMOGENEAL (in Physiology) Of the same nature and properties as homogeneal particles.

HONE. A fine kind of whetstone used for setting razors.

HONEY. A thick, viscid fluid substance, collected by the bees from vegetables and flowers. It is distinguished into three kinds, namely, first, the virgin honey, which is the first produce of the swarm, obtained by draining from the combs without pressing; the second sort is thicker than the first, and is procured by pressure; the third is the worst sort, which is extracted by heating the combs over the fire, and then pressing them. In the flowers of plants, near the basis of the petals, are certain glands containing a sweet juice, which the bees suck up by means of their proboscis or trunk, and, flying with it to their hives, discharge it again from the stomach through the mouth into some of the cells of the comb. This honey is destined for the food of the young, but, in hard seasons, the bees are sometimes reduced to the necessity of feeding on it themselves, and die of hunger after they have eaten it all up. In France, a good swarm of bees will yield, in two years, nearly thirty pounds of honey; but honey is most abundant in the islands of the Archipelago, and other countries which abound with flowers throughout the year. From honey is made the strong liquor called mead.

HONEY-BAG. The stomach of the bee, which is the reservoir of the honey.

HONEY-COMB (in Husbandry). The repository which the bees make in the hive for saving their honey in.

HONEY-COMB (in Gunnery). A flaw in the metal of a piece of ordnance, when it is badly cast.

HONEY-DEW. A sort of mildew of a sweet taste, found early in the morning on plants, flowers, &c.

HONEY-FLOWER (in Botany). A plant having the appearance of a shrub, and bearing spikes of chocolate-coloured flowers in May, in each of which a quantity of black sweet liquor is found

HONEY-SUCKLE (in Botany). A shrub with a climbing stalk, the flowers of which form a tube in the shape of a huntsman's horn. They are produced in clusters, and are very sweet.

HONI SOIT QUI MAL Y PENSA

in England, the motto of the order of the Garter, signifying, Evil be to him that evil thinks.

HONOUR. In England, the most noble part of seignories.

HONOUR (in Military Affairs). External marks of honour paid to superior officers.

HONOUR COURTS. In England, courts held within the bounds of an honour.

HONOUR, MAIDS OF (in Court Etiquette). In England, ladies in the queen's household, who attend the queen when she goes out.

HONOURS OF WAR. Honourable terms granted to a vanquished enemy, when he is permitted to march out of a town with all the insignia of military etiquette.

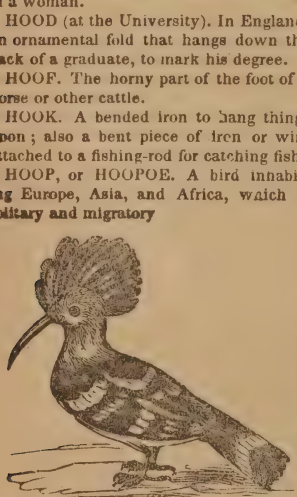
HOOD. An upper covering for the head of a woman.

HOOD (at the University). In England, an ornamental fold that hangs down the back of a graduate, to mark his degree.

HOOF. The horny part of the foot of a horse or other cattle.

HOOK. A bended iron to hang things upon; also a bent piece of iron or wire attached to a fishing-rod for catching fish.

HOOP, or HOOPOE. A bird inhabiting Europe, Asia, and Africa, which is solitary and migratory



**HOP.** A plant with a creeping root, the stalks of which climb and twist about whatever is near them; wherefore, in hop grounds, poles are fixed near to the plant for them to rise upon. Hops are said to have been introduced into England from the Netherlands in the sixteenth century: they are principally used to boil up with beer, in order to prevent it from turning sour, and to give it a strengthening quality. Hops require to be planted in open situations, and in a rich strong ground. The two best sorts are the white and the gray rind. These should be planted in hills about eight or nine feet asunder. About the beginning of July hops begin to blow, and are ready to gather about the latter end of August, when, by their strong scent, their hardness, and the brown colour of the seed, they may be known to be fit. The best method of drying hops is on a kiln over a charcoal fire; when the stalks are brittle, and the top leaves easily fall off, they are properly dried. When taken from the kiln, they should be laid to cool for three weeks or a month before they are bagged.

HORIZON (in Astronomy). A great circle of the sphere, which divides it into upper and lower hemispheres. The apparent or sensible horizon is that circle of the heavens which bounds the view of the observer, in distinction from the rational or real horizon, which is a circle encompassing the earth exactly in the middle. It is represented in the globes by the wooden frame which contains the globe.

HORN (in Natural History). The hard pointed bodies which grow on the heads of some granivorous animals, and serve either for defence or ornament; also the slender bodies on the heads of insects, &c.

HORN (in Chemistry). Is mostly composed of albumen, gelatin, and phosphate of lime, but the horns of the buck and stag are of an intermediate nature between horn and bone.

HORN (in Music). A wind instrument, chiefly used in hunting and in the chase.

HORNBEAM. A tree that has leaves like the elm or beech tree; it was formerly used in hedgerows. The timber is very tough and inflexible.

HORNBLENDE (in Mineralogy). A sort of slaty stone, of a green and blackish green colour. It is a very abundant mineral.

HORN-BOOK. The first book for children, containing the alphabet, which was formerly covered with transparent horn.

HORNET. A large, strong, and stinging insect, of the wasp kind.

HORN-ORE (in Mineralogy). One of the species of silver ore.

HORNPIPE. An animated sort of dance.

HORN-STONE. A species of flint.

HORNWORK (in Fortification). An outwork which advances towards the field.

HOROLOGY. The science which treats on the measuring of portions of time. The principal instruments used in the measuring of time are dials, clepsydræ or water-clocks, clocks, watches, and in some cases also hour-glasses.

The dial was doubtless one of the first instruments contrived for the measuring of time by means of the sun. The first of

record is the dial of Ahaz mentioned in Isaiah. This king began to reign 400 years before Alexander, and within 12 years of the building of Rome. The Chaldee historian Berosus is said to have constructed a dial on a reclining plane almost parallel to the equator. Aristarchus the Samean, Thales, and others are also mentioned as the makers of dials. The first sun-dial at Rome was set up by Papirius Cursor in the 460th year of the building of the city. The subject of dialling, or of making dials, has particularly occupied the attention of mathematicians within the last three centuries. Clavius is the first professed writer on the subject. Deschales and Ozanam in their Courses, and Wolfius in his Elements, have simplified the science. M. Picard gave a new method of making large dials by calculating the hour lines, and De la Hire, in his Dialling, gave a geometrical method of drawing hour lines from certain points determined by observation. The method of drawing primary dials on easy principles is to be found in the Dialling of Everhard Walper, and the Rudimenta Mathematica of Sebastian Munster. Among the more modern treatises on this subject may be reckoned that of Wells in his Art of Shadows, Ferguson in his Lectures on Mechanics, Emerson in his Dialling, Leadbetter in his Mechanic Dialling, Mr. W. Jones in his Instrumental Dialling, and Bishop Horsley in his Mathematical Tracts.

Scipio Nasica was the first who constructed the clepsydra, although it is supposed to have been invented by the Egyptians under the Ptolemies about 150 years before the Christian era. They serve for measuring time in the winter, as the sun-dials do in the summer; but they had two great defects: the one, that the water ran out with greater or less facility, as the air was more or less dense; and the other, that the water ran more readily at the beginning than towards the conclusion. The Egyptians, by this machine, measured the course of the sun; and Tycho Brahe, in modern times, made use of it to measure the motion of the stars, &c. Dudley also used the same contrivance in making all his maritime observations.

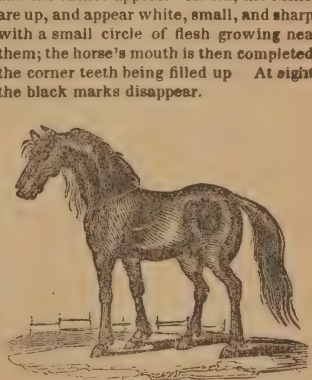
The invention of clocks has been ascribed to different authors; namely, to Boetius in the sixth century, to Paciticus, Archdeacon of Verona, and to Silvester in the tenth century.

HOROMETRY The art of measuring hours

HOROPTER (in Optics). A right line drawn through the point where the two optic axes meet, parallel to that which joins the two pupils.

HOROSCOPE (in the exploded Science of Astrology) The degree or point of the horizon rising above the eastern point of the horizon at any given time, when a prediction was to be made of a future event; also a scheme or figure of the twelve houses.

HORSE. A domestic animal, that excels all others in beauty and usefulness. The most esteemed breeds of horses are, the Barbary or Arabian horses, remarkable for their fleetness; the English racehorse and hunter, which combines beauty with swiftness; and the English draught-horses which are distinguished for their size and strength, &c. There is no creature so valuable as the horse, and none that oftentimes fares worse. The age of a horse under eight years old is mostly to be known by his teeth. The horse has twenty-four grinders; four tushes, or single teeth; and twelve front teeth, or gatherers. Mares in general have no tushes. The black mark or cavities denoting the age, are to be found in the corner front teeth, adjoining the tushes. At four years and a half old, the mark teeth are just visible above the gum, and the cavity is distinctly to be seen. At five, the remaining colt's teeth are shed, and the tushes appear. At six, the tushes are up, and appear white, small, and sharp, with a small circle of flesh growing near them; the horse's mouth is then completed the corner teeth being filled up At eight the black marks disappear.



HORSE (in Military Affairs). A body of horsemen.

HORSE (among Carpenters). A frame or trestle on which boards or planks are laid to be cut and otherwise worked.

HORSE (among Printers). A stage on which pressmen set their heaps of paper for printing.

HORSE. A sea term for a rope made

fast to one of the shrouds, having a dead man's eye at the end

HORSE-BEAN. A small bean usually given to horses.

HORSE-BREAKER. One who breaks in young horses, and fits them for use.

HORSE-CHESTNUT. A tree, which yields a prickly nut.

HORSEDEALER. One who buys horses to sell them again.

HORSE-DOCTOR. One who undertakes to cure the diseases of horses.

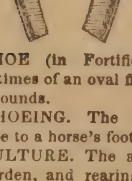
HORSE-LEECH. A large sort of leech that fastens on horses.

HORSEMAN. One skilled in riding

HORSEMANSHIP. The art of riding and managing horses.

HORSERACE. A match of horses in running.

HORSESHOE (in Smithery) A circular piece of iron fitted to the foot of a horse. This shoe is sometimes turned up in the winter season, to prevent the horse from slipping: this is called rough-shoeing. As an improvement upon this sort of shoeing, the clips have been made removeable at pleasure by means of a screw



HORSESHOE (in Fortification). A work, sometimes of an oval figure, raised in marshy grounds.

HORSESHOEING. The fitting and nailing a shoe to a horse's foot.

HORTICULTURE. The art of cultivating a garden, and rearing the finest kinds of plants.

HORTUS SICCUS. Literally, a dry garden; an appellation given to a collection of specimens of plants carefully dried and preserved. Various methods have been adopted by botanists for obtaining a hortus siccus; but that of pressing the plants, that are to be dried, in a box of sand or with a hot smoothing iron, has been recommended. If pressure be employed, that is best effected by means of a botanical press made for the purpose, in which the plants are put, with sheets of dry paper between. At first they ought to be pressed gently, and occasionally taken out in order to see that none of the leaves are rumpled or folded. As they continue to dry, the pressure may be increased. When they are sufficiently dried, they may be taken out and laid on dry paper. Plants that are succulent require a longer and harder pressure, but for the most part three days pressure is sufficient.

HOSANNA. A solemn acclamation used by the Jews in the Feast of Tabernacles.

HOSE (among Mariners). A leathern tube for conveying water from the main decks into the casks.

HOSIERY. Stockings, and other goods in a shop that are spun or wove.

HOSPITAL. A house, erected out of charity, for the support and relief of the sick and poor

HOSPITALLERS. An order of knights who built an hospital at Jerusalem for the entertainment of pilgrims.

HOST. The consecrated wafers in the Roman Catholic communion

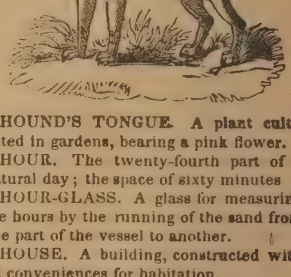
HOSTAGE. A person left as a surety for the performance of the articles of a treaty

HOTBED. A bed made in a wooden frame with horse-dung, and covered with glasses, for raising early plants.

HOTCH-POT. Properly, flesh cut into small pieces, and stewed with herbs and roots; in Law, in England, the putting lands together, that belong to coparceners, for the purpose of distributing them equally

HOTHOUSE. A building, constructed in a garden, for the rearing of exotics and tender plants that require heat.

HOUND. A kind of sporting dog, having pendulous ears, and very strong scent.



HOUND'S TONGUE. A plant cultivated in gardens, bearing a pink flower.

HOUR. The twenty-fourth part of a natural day; the space of sixty minutes

HOUR-GLASS. A glass for measuring the hours by the running of the sand from one part of the vessel to another.

HOUSE. A building, constructed with all conveniences for habitation.

HOUSE (among Genealogists). A noble family, or an illustrious race descended from the same stock.

HOUSE (in Astrology). The twelfth part of the heavens.

HOUSEHOLD The whole of a family

HOUR CIRCLE. In cosmography, a term applied to any great circle that passes through the two poles; the hour of the day being known when that circle is ascertained upon which the sun is for the time being. Hour-circles are drawn on the globe at 15° distant from each other on the equator.

HOWITZER. A kind of mortar, mounted upon a carriage like a gun.

HOY. A small vessel for carrying passengers from one place to another.

HUE AND CRY (in Law). The common law process of pursuing a felon.

HUGUENOTS. The Protestants of France, so called by way of contempt in the sixteenth century.

HULK. Any old vessel that is laid by, unfit for further service

HULKS. Old vessels, stationed in the river Thames, in England, wherein convicts are kept to hard labour.

HULL. The main body of a ship.

HUMMING-BIRD. The smallest of all birds, which extracts the nectar from the flowers with a humming noise like that of a bee.

HUMOURS OF THE EYE. Are three; namely, the aqueous or watery humour, which lies in the fore part of the globe; the crystalline, or icy, next to the aqueous; and the vitreous or glassy humour, which is larger than the rest, and fills the backward cavity of the eye

HUNDRED. A number consisting of ten multiplied by ten.

HUNDRED (in Law). A part of a shire or county, which formerly consisted of ten tithings, or ten times ten households.

HUREALITE, A crystallized mineral, with a vitreous lustre, whose constituents are phosphoric acid, protoxide of iron, protoxide of manganese, and water

HURONITE. The name of a yellowish-green mineral which occurs in boulder stones in the neighborhood of Lake Huron; its constituents are silica, alumina, protoxide of iron, lime, magnesia, and water: sp. gr. 2·86: H = 2·25.

HURRICANE. A storm of wind, frequent in the East and West Indies, which arises from the conflict of opposite winds.

HUSBANDRY The practical part of agriculture

HUSH-MONEY (in Law) A bribe given to a person not to reveal something to which he is privy

HUSSARS. Hungarian horsemen, said to be so called from the huzza or shout which they gave at the onset in battle

HYACINTH (in Botany). A bulbous plant, the leaves of which are long and narrow, the stalk upright and naked, and the flower growing on the upper part of a spike.

HYACINTH (in Mineralogy). A sort of pellucid gem of a red colour with a mixture of yellow.

HYADES. A cluster of five stars in the face of the constellation Taurus.

HYÆNA. A ferocious beast, nearly allied to the wolf and dog. It infests burying grounds, and seizes whatever comes in its way.

HYBRID. An epithet for any animal whose sire is of one kind, and dam of another kind.

HYDATID. An animal substance, in shape like a bladder, and distended with an aqueous fluid, which grows in the viscera of the human body.

HYDRA. A fabulous monster with many heads, that is said to have infested the lake Leonæa

HYDRA (in Astronomy). A southern constellation.

HYDRANGEA. A greenhouse plant, bearing a flower with a large head.

HYDRATE (in Modern Chemistry). The combination of water with other bodies in a solid state, as slacked lime, which, being a combination of lime and water, is a hydrate of lime.

HYDRAULICON, or WATER-ORGAN (in Music) An instrument acted upon by water.

HYDRAULICS. That part of statics which treats of the motions of fluids, particularly of water issuing from orifices in reservoirs, or moving pipes, tubes, canals, rivers, &c. Among the machines which serve for the display of the phenomena of hydraulics, are the syphon, the pump, and the fire-engine. Among the moderns, the terms Hydraulics and Hydrodynamics are employed indifferently to denote this science See HYDRODYNAMICS.

HYDRODYNAMICS. Is properly that science which treats of the power or force of water, whether it acts by impulse or pressure; but in an extended sense, it is that branch of mechanics which treats of the motion of liquids or nonelastic fluids, and the forces with which they act on other bodies

HYDRODYNAMICS, History of. Although the doctrine of fluids and their motion is but partially treated by the ancients, yet, as respects the action of water in rivers, fountains, and aqueducts, it is certain that they must have had a considerable portion of practical knowledge. Aristotle treats on the nature of subterraneous waters, as also of those which are above. Hero of Alexandria made an artificial fountain, which bears his name. The Romans displayed their acquaintance with the art of carrying waters, in their famous aqueducts; and Frontinus, an engineer, who wrote on this subject, has given some few rules and hints on the motion of fluids. It is, however, only within the three last centuries, that this subject has attracted any particular notice. Benedict Castelli was the first who, in his treatise Dell' Amesura dell' Acque Currenti, investigated the measure of the flux of waters, which he found to depend upon the area of the section and the velocity of the water conjointly. Since his time, many discoveries and theorems have been made on the motions of fluids by Sir Isaac Newton in his Principia; Daniel Bernouilli, in his Hydrodynamique; D'Alembert, in his Traité des Fluides; M. Bossut, in his Hydrodynamique; M. Buat, in his Principes d'Hydraulique; and M. Eytelwein, in his Handbuch der Mechanik und der Hydraulik.

HYDROGEN GAS. A constituent of water and the lightest species of ponderable matter hitherto known, which was discovered by Mr. Cavendish in 1766. It is an inflammable air, or an invisible aeriform fluid, which burns rapidly when kindled, in contact with atmospheric air, and forms what are now termed gas-lights. When combined with oxygen, it produces water. It is unfit for respiration, so that animals, when obliged to breathe it, die almost immediately.

HYDROGRAPHY. A description of rivers, bays, lakes, and other pieces of water.

HYDROLOGY. That part of natural history which treats of and explains the nature and properties of waters in general

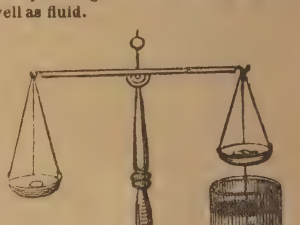
HYDROMETER. An instrument for measuring the density and gravity, &c. of water and other liquids. That which is designed simply for ascertaining the specific gravity of different waters is more commonly called an aerometer or waterpoise, the term hydrometer being more commonly used to denote an instrument for measuring the specific gravity of spirits though sometimes used indifferently for either. Dr. Desaguliers contrived an hydrometer for determining the specific gravities of different waters to such a nicety, that it would show when one kind of water was but the 40,000th part heavier than another.

HYDROMETRY. The mensuration of fluids, as to their density, gravity, &c.

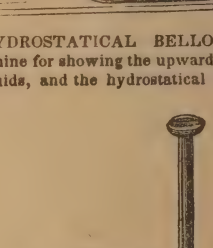
HYDROPHOBIA, i. e. A Dread of Water. A distemper arising from the bite of a mad dog, which is always accompanied with a horror of water and other liquids.

HYDROSCOPE. An instrument anciently used for the measuring of time

HYDROSTATICAL BALANCE. A kind of balance contrived for the finding the specific gravities of bodies solid as well as fluid.



HYDROSTATICAL BELLOWS. A machine for showing the upward pressure of fluids, and the hydrostatical paradox



HYDROSTATICAL PARADOX A principle in hydrostatics, so called because it has a paradoxical appearance at first view; it is this, that any quantity of water or other fluid, how small soever, may be made to balance and support any quantity or any weight, however great it may be

HYDROSTATICS. The science which treats of the laws regulating the motions, pressure, gravitation, and equilibrium of fluid bodies, particularly water, and also

of solid bodies immerged therein. This science is divided into three branches, namely, hydrostatics, properly so called, which treats of fluids in an equilibrium, their density, gravity, &c.; hydraulics, which treats of fluids in a state of motion; and pneumatics, which treats of elastic fluids These two last branches will be found explained in their respective places.

The first branch of hydrostatics engaged the attention of Archimedes, who appears to have first attempted to determine the specific gravity of bodies, in consequence of the following circumstance. Hiero, king of Syracuse, having reason to suspect that a goldsmith, whom he employed to make him a crown of gold, had adulterated it with a quantity of silver, he requested Archimedes to detect the cheat. Accordingly this philosopher procured two masses of gold and silver of equal weight with the crown, which he immersed in a vessel full of water, at the same time carefully noticing the quantity of water which each displaced; after which he immersed the crown of gold also in the same vessel, and by comparing the quantity of water which flowed over each time, he was enabled to ascertain the proportions of gold and silver in the crown. He is said to have been led to this idea by observing on one occasion, whilst he was bathing, that as he immerged his body, the water ran over the bath, whence he concluded that the water which ran out when his whole body was immerged was equal in bulk to his body; and on the same principle he considered that if the crown were altogether of gold, the ball of gold, being of the same bulk as the crown, would, when immersed, raise the water just as high as the crown immersed, but if it were wholly of silver, the ball of silver being immersed would raise the water no higher than the crown immersed; and if the crown was of gold and silver mixed in a certain proportion, this proportion would be discovered by the height to which the crown would raise the water higher than the gold and lower than the silver. The authors who have treated further on this subject may be found under the article HYDRODYNAMICS

HYGROMETER. An instrument for measuring the degree of moisture and dryness of the atmosphere

HYMEN. The god of marriage.

HYMENOPTERA. An order of insects in the Linnæan system, having membranaceous wings, as the gall-fly, the saw-fly, the bee, the wasp, the ichneumon, &c

HYPERBOLA. One of the curves formed by cutting a cone obliquely to its axis; and if the plane be produced so as to cut the opposite cone, another hyperbola will be formed, which is called the opposite hyperbola to the former

HYPERBOLE. An exaggerated representation of any thing.

HYPOCHONDRIAC. One troubled with the spleen or melancholy.

HYPOTHENUSE. The longest side of a right-angled triangle.

HYPOTHESIS. A principle taken for granted, in order to draw conclusions therefrom for the proof of a point in question

HYSSOP. A plant with long narrow leaves, bearing a crest of flowers. It is doubtful whether this be the hyssop mentioned in Scripture.

HYSTERICS. Spasmodic, convulsive affections of the nerves, to which women are particularly subject

## I

I, the ninth letter of the alphabet, used as a numeral signifies one, and stands for any numbers of units as often as it is repeated, as II, two, III, three, &c. When placed before a higher numeral, it diminishes it by one, as IV, four, IX, nine; and when after, it increases it by one, as XI. e even, XII, twelve, XIII, thirteen, &c.

IAMBIC VERSE. Verses composed of iambic feet, that is, a short and a long foot alternately.

IBIS. A bird like a stork, which was worshipped in Egypt.

ICEHOUSE. A house in which ice is deposited against the warm months.

ICH DIEN, i. e. I serve. The motto on the arms of the Prince of Wales in England, first taken by Edward the Black Prince.

IB. IBID. or IBIDEM. The same

IBEX. An European variety of the goat with very long horns

ICHNEUMON. An Egyptian animal of the weasel kind that feeds upon the eggs of the crocodile.

ICHNEUMON (in Entomology). A sort of fly, which deposits its eggs in the bodies of other insects.

ICHNOGRAPHY (in Architecture). The ground plan of a building.

ICHNOGRAPHY (in Fortification). A draught of the length and breadth of the works raised about a place.

ICHTHYOLOGY. That branch of general zoology which treats of fishes. These animals are divided into five orders, namely, into apodal, or those which have no ventral fins; jugular, which have the ventral fins placed more forward than the pectoral; abdominal, or those which have the ventral fins situated behind; thoracic, or those which have their ventral fins situated immediately under the pectoral; and the cartilaginous fishes, which have a cartilaginous instead of a bony skeleton.

ICHTHYOLOGY, History of. The subject of fishes has engaged the attention of naturalists from the time of Aristotle to the present period. Aristotle, probably the first writer on the subject, divided fishes into cetaceous, spinose, and cartilaginous; he was, after a long interval, followed by several others, who treated of the fishes of particular places, as Ovid, who treats of the fishes of the Euxine, Appian of those of the Adriatic, and Ausonius of those of the Moselle, &c.; among the moderns there are also some who have treated this subject partially, as Paul Jovius, who described the fishes of the Mediterranean, Schwenkfelt those of Silesia, Schonefelt those of Hamburgh, Marcgrave the fishes of Brazil, Russell and Francis Valentine those of Amboyna. Pliny was a general writer on the subject and pursued no method; Ælian and Athenæus have only scattered notices of some few fishes. Among the moderns, Bellonius, Rondeletius, Gesner, Willughby, Ray, Artedi, and Linnæus have done most towards reducing this science to a systematic order.

ICOSANDRIA (in Botany). The twelfth class in the Linnæan system, including plants with twenty stamens or more to their flowers, as the melon, Indian fig pomegranate, plum, &c.

IC. In chemistry, a termination affixed to those acids which contain in combination the highest known quantity of the acidifying principle.

ICE. Water or other liquid solidified by cold; water becoming solid at 32° Fahrenheit. Icebergs are vast bodies of ice, among the most remarkable of which are those of Spitzbergen. Some of these icebergs are the creation of ages, and receive annually additional bulk by the falling of snow and of rain, which often instantly freezes, and more than repairs the loss occasioned by the influence of the sun. Icefloe is an aggregated mass of floating ice, frequent in the northern seas, and very dangerous to navigation.

ICELAND SPAR. In mineralogy, a pure variety of calcareous spar or carbonate of lime, remarkable for its clearness, and the beautiful double refraction which it exhibits.

ICE SPAR. A mineral of a whitish-grey color, consisting of silica, alumina, potash, lime, peroxide of iron, and water: sp. gr. 4·32; H = 3.

ICHNEUMONES. A tribe of parasitical hymenopterous insects.

ICHNITES. In geology, fossil footprints of animals. Ichnolite is a stone retaining the impression of fossil footmarks.

I. H. S. An abbreviation for Jesus Hominum Salvator, i. e. Jesus the Saviour of Mankind.

ICHNOGRAPHY. In perspective, the view of anything cut off by a plane parallel to the horizon. In architecture, a transverse or horizontal section of a building, exhibiting the plot of the whole edifice, and of the several apartments in any story. Among painters the word is used to describe images or ancient statues of marbles and copper, of busts and semibusts, of paintings in fresco, or mosaic works.

ICHNOLOGY. The science of fossil footprints.

ICHOR. A thin and sanious fluid, which escapes from wounds or sores, and irritates or inflames the parts over which it flows.

ICHTHYOCOLLA. The scientific name of isinglass, a very pure form of gelatine, prepared from certain parts of the entrails of several fish. Good isinglass is free from smell or taste, and perfectly soluble in boiling water.

ICHTHYOLITE. A stone containing the petrifaction of a fish or any of its parts.

ICHTHYOLOGY. The science or knowledge of fishes; that department of natural history which treats of the structure, habits, and classification of fishes. Ichthyotomy, the anatomy of fishes.

ICHTHYOPHTHALMITE. A mineral of pearly lustre; the fish-eye stone.

ICHTHYOSIS. In pathology, a roughness and thickening of the skin, portions of which become scaly, an occasionally corneous, with a tendency to excrescences.

IDÆ, or IDES. A Greek termination, employed in natural history to denote a certain order or class of animals to which the termination idæ or ides is affixed.

IDE. In chemistry, a termination for certain compounds which are not acid; as oxides, chlorides, &c.

IDEALISM. In metaphysical science, the theory or system which makes everything consist in ideas, and denies the existence of material bodies. Ideology is a treatise on ideas, or the science of mind.

IDIOLECTRIC. Having the property of manifesting electricity on friction.

IDIOPATHY. In pathology, a primary disease, not consequent on other morbid affections.

IDIOSYNCRASY. In physiology, a peculiarity of temperament or constitution, which predisposes persons to the attacks of certain disorders from which others are exempt.

IDEOLOGY. A treatise on ideas, or the doctrine of ideas; the science of mind.

IDES. In the ancient Roman Calendar, the 15th day of March, May, July, and October, and the 13th day of the other months.

IDOCRASE. A mineral of various shades of brown and green, with a vitreous lustre, consisting of silica, aluminia, protoxide of iron, lime, and magnesia: sp. gr. 3·34; H = 6.

IDRIALINE. A mineral substance, composed of 18 parts of carbon and 1 of hydrogen.

IGNIS FATUUS. A luminous meteor seen in summer nights in marshy places; Jack-a-lantern; Will-with-the-wisp.

IGUANIDÆ. A family of Saurian reptiles, of which Iguana is the type and genus.

IGUANODON. In geology, an extinct Saurian reptile of enormous size. The remains of one discovered in Tilgate Forest measured 70 feet from the snout to the tip of the tail; the head was 4½ feet in length; the tail, 13 feet; height of the body, 9 feet; its circumference, 14½ feet; length of the thigh and leg, 8 feet two inches. (Dr. Mantel). The Wealden formation, which contains the remains of these more than gigantic tenants of a former world, is overlaid by the chalk rocks of England, and is a fresh-water deposit.

ILLUMINATI. A sect of heretics, who sprung up in Spain about the year 1575; the name given to certain associations in modern Europe, who were said to have combined to overthrow the existing religious institutions.

ILMENITE. In mineralogy, a variety of iron ore, of a dark brown color, consisting of titanic acid, peroxide of iron, protoxide of iron, protoxide of manganese, and magnesia: sp. gr. 4·76; H=5·75.

IMMERSION. In astronomy, the disappearance of any cellestial object behind another, or its shadow. Thus, in the eclipse of one of Jupiter's satellites, the immersion take place when the satellite disappears behind the body of the planet, or enters into the planet's shadow; and in an occultation of a planet or fixed star by the moon, the immersion is the disappearance of the star or planet behind the body of the moon, and its reappearance is called its emersion.

INALINE. A vegetable product, resembling starch, obtained from the roots of Inula hellenium by boiling them in water.

INCIDENCE. In dynamics and optics, the angle of incidence is the angle made by a ray of light falling on an object with a line drawn perpendicularly to the surface struck.

IMPACT. In mechanical science, the action of one body upon another, to put the latter, if at rest, in motion, or if in motion, to increase, retard, or alter its direction. The point against which the impelling body acts is called the point of impact.

IMPASTATION. In sculpture, the mixture of different matters bound together by means of cements, capable of resisting the action of fire or air.

INCOGNITO, or INCOG (in Europe). Literally, unknown, not to be recognised; a mode of travelling without any mark of distinction, which is sometimes adopted by princes and great people who do not wish to be recognised.

INCLINED PLANE (in Mechanics). A plane inclined to the horizon, or making an angle with it, which is one of the mechanical powers.

INCOMBUSTIBLE. A body that is incapable of undergoing combustion

INCOMBUSTIBLE CLOTH. A sort of cloth made from a stone in the form of a talc; which stone is called lapis amianthus, and asbestos.

INCOMMENSURABLE (in Geometry). A term applied to two lines or quantities which have no common measure by which they can be divided.

INCORPORATION (in Law). The formation of a body politic.

INCORPORATION (in Chemistry). The mingling the particles of different bodies together into one mass, in such manner that the different ingredients cannot be distinguished.

INCREMENT (in Fluxions). The small increase of a variable body. Dr. Brook Taylor, to whom we are indebted for the doctrine of increments or finite differences, denoted his increments by a dot under the variable quantity, thus the increment of $x$ was denoted by $\dot{x}$; others have employed a small accent, thus $x'$, or thus $,x$. M. Nicole uses another letter to denote the increment of $x$, or any variable, as by $n$; but Euler employs the character $\triangle$, thus $\triangle x$ the increment of $x$, and $\triangle y$ the increment of $y$. Dr. Brook Taylor first published his Methodus Incrementorum in 1715, which was afterwards illustrated by M. Nicole in the Memoirs of the Royal Academy of Sciences for the years 1717, 1723, and 1724. In 1723, Emerson published his method of Increments; but the writer who contributed most to the elucidation of this subject was Euler, who, in his Institutiones Calculi Differentialis, gave a new and extended form to this branch of analysis. Various other writers have since treated on this subject, among whom Lacroix, in his Traités des Différences, &c. is thought to have been the most happy.

INCUBATION. The process of a bird sitting on eggs and hatching its young; the time required for this varies in different birds, domestic fowls sit three weeks ducks, geese, and turkeys a month, pigeons eighteen days, &c.

INCUBUS, or NIGHT MARE. A disease which consists in an obstructed respiration, that produces the sensation in sleep of a weight pressing on the breast.

INCUMBENT. One in present possession of a benefice

INDECLINABLE. Not varied by terminations, as an indeclinable noun.

INDEFINITE PRONOUNS. Words that are loose and undetermined in their meaning, as whatsoever, any, every, &c

INDEMNITY (in Law). The saving harmless; or a writing to secure one from all damage and danger that may ensue from any act.

INDEHISCENT. In botany, applied to fruits which do not split open, as the apple.

INDENTED. In fortification, indented line is a serrated line forming several angles, so that one side defends another.

INDENTURE. A writing containing a contract, originally so called from the two copies being indented to show their connecting correspondence with each other.

INDETERMINATE. In algebra, indeterminate analysis is a branch which has for its object the investigation of problems that admit of an infinite number of different solutions. Indeterminate coefficient is a method of analysis of very extensive application in the higher mathematics.

INDEX pl. INDEXES, and in mathematics, INDICES, in music, a character or director at the end of a stave to direct to the first note of the next stave. In arithmetic and algebra it is used as an exponent. In optics, it expresses the constant ratio which exists between the sines of the angles of incidence and refraction. Index of a globe is a little style fitted on to the north pole, and turning round with it, pointing to certain divisions in the hour circle.

INDIANITE. A greyish shining mineral found in the Indian Carnatic, in masses of a foliated structure.

INDIAN RUBBER CAOUTCHOUC. An elastic gum which exudes from a tree in South America.

INDICATOR. Applied to the muscle which extends the forefinger.

INDICOLITE. An indigo-colored mineral, a variety of tourmaline or schorl, found in Sweden.

INDIGOTIC. In chemistry, noting an acid obtained from indigo when it is gradually added to boiling nitric acid, previously diluted with 12 or 15 parts of watea. It forms fine colorless or yellowish-white needles.

INDITED. In law, that is accused,

of some offence by bill preferred to jurors.

INDICTION, or CYCLE OF INDICTION (in Chronology). A mode of computing time by the space of fifteen years, instituted by Constantine the Great. The popes, since the time of Charlemagne, have dated their acts by the year of the indiction, which was fixed on the first of January. At the time of the reformation of the calendar the year 1582 was reckoned the tenth year of the indiction. Now this date when divided by fifteen eaves a remainder seven, that is three less than the indiction, and the same must necessarily be the case in all subsequent cases, so that in order to find the indiction for any year divide the date by fifteen and add three to the remainder.

INDICTMENT. A bill or accusation drawn up in form of law, and exhibiting some offence, which is preferred to a grand jury preparatory to the trial in open court.

INDIGENOUS. Native, as applied to animals and plants.

INDIGO. A beautiful blue colour or dye procured from a plant called by the Americans, anil; in the Linnæan system, Indigofera. The indigo used by the diers is a fæcula procured from the leaves of the plant, which are laid in vats full of water, and left to ferment The liquor is then drawn off into another vat, and after having been well stirred up, it is drawn off, and what remains at the bottom is exposed to the air until it is thoroughly dry, when it is fit for use. The principal constituent parts of indigo are mucilaginous, resinous, and earthy matter, with some oxide of iron.

INDORSING. See ENDORSING.

INDUCTION (in England). Putting a clerk in possession of his living.

INDUCTION (in Logic). A mode of argumentation or reasoning, when the species is gathered out of the individuals, and the genus out of the species, &c.: as, if it be true that all planets borrow their light from the sun, then, by induction, it is true that Jupiter, Mars, and each individual planet does the same.

INDULGENCES (in the Romish Church). Pardons for sin, granted by the pope to such as profess to be penitents.

INERTIA, or VIS INERTIÆ (in Physiology). A passive principle, supposed by Sir Isaac Newton to reside in bodies, by which they persist in their motion or rest, and receive motion according to the force impressed upon them, and resist as much as they are resisted

INFANT (in Law). Any person under the age of twenty-one.

INFANTA. The title given to the eldest daughter of the king of Spain or Portugal

INFANTE. The title given to the eldest son of the king of Spain and Portugal

INFANTRY. The body of foot soldiers

INFECTION. The communication of a disease by certain effluvia which fly off from distempered bodies, or from good that are infected.

INFINITESIMALS. Indefinitely small parts.

INFINITIVE MOOD. The mood of a verb, so named because it is not limited by number or person.

INFIRMARY. A place where the sick poor are received, or can get advice and medicines gratis.

INFLECTION (in Optics). A multiplex refraction of the rays of light, caused by the unequal thickness of any medium.

INFLECTION (in Grammar). The change which a word undergoes in its ending, to express case, number, gender, mood, tense, &c.

INFLECTION, POINT OF (in Geometry). A point where a curve begins to bend a contrary way.

INFLORESCENCE. The manner in which plants flower, or in which flowers are fastened to the stem by means of the peduncle.

INFLUENZA. A sort of catarrh or disease from cold, so called, because it was supposed to be produced by the peculiar influence of the stars.

IN FORMA PAUPERIS. See FORMA.

INFORMATION (in Law) An accusation or complaint exhibited against a person, for some criminal offence. An information differs from an indictment, inasmuch as the latter is exhibited on the oath of twelve men, but the information is only the allegation of the officer or individual who exhibits it.

INFORMER (in Law.) One who gives information, particularly private information, to a magistrate.

INFUSIBLE. Not to be fused, or made fluid.

INFUSION. A method of obtaining the virtues of plants, roots, &c. by steeping them in a hot or cold liquid.

INFUSORIA. One of the Linnæan orders of animals, of the class vermes, including such as are simple, microscopic animalculæ found in stagnant water.

INGOT. A wedge or bar of gold.

INGREDIENT. Any simple that enters into the composition of a compound medicine.

INGRESS (in Astronomy). The sun's entering into the first scruple of Aries, &c.

INGROSS. See Engross

INHERITANCE (in Law). An estate to a man and his heirs.

INJECTION (in Anatomy). The filling the vessels of a dead subject with any coloured matter to show their ramifications.

INJECTION (in Surgery). The forcing any liquid into the body by means of a clyster.

INITIALS. Letters placed at the beginnings of words or sentences.

INJUNCTION. A kind of prohibition granted by courts of equity, principally with a view of preserving property pending a suit.

INK. A black liquor for writing; it is sometimes red, when it is called red ink. Black ink is of three kinds: namely, Indian ink, made in China of lamp-black and size; printer's ink, composed of oil and lamp-black for the black ink, or of vermillion for the red ink; writing ink, composed of an infusion of nutgalls, sulphate of iron or copper dissolved in water, logwood, and gum arabic. The red ink is composed of Brazil wood, gum, and alum.

INK, Sympathetic See Sympathetic Ink.

INLAND. That place which is situated in the interior of a country, far from the seacoast.

INLAND BILLS (in Commerce). Bills payable in the country where they are drawn.

INLAND TRADE. Trade carried on within the country; home trade, as opposed to foreign commerce.

INLAYING (among Mechanics). Working in wood or metal with several pieces of different colours, curiously put together.

IN LIMINE. In the outset; before any thing is said or done.

INN. A house of entertainment for travellers.

INNS OF COURT (in London). Houses or colleges for the entertainment of students in the law; the principal of these societies at present are Lincoln's Inn, the Inner Temple, and the Middle Temple.

INNUENDO (in Law). A hint, a doubtful or obscure expression.

INOCULATION (in Surgery). The operation of giving the small-pox to persons by incision. When a person is inoculated with the cow-pox, it is called vaccination.

INOCULATION (in Gardening). A kind of grafting in the bud; as when the bud of the fruit tree is set in the stock or branch of another, so as to make several sorts of fruit grow on the same tree

INQUIRY. The act of inquiring, search for truth, information, or knowledge; examination into facts or principles, interrogation, scrutiny, investigation. In law, a Writ of Inquiry is a writ directed to the sheriff, commanding him to summon a jury, and to inquire into the amount of damages due from the defendant to the plaintiff in a given action. In military matters, a Board of Inquiry, is a term used in contradistinction to a court-martial. It consists of a certain number of officers, who assemble to make inquiry on certain matters, but not on oath, as a court-martial.

INOSCULATION. In anatomy, union by junction of the extremities, as in arteries or veins.

INSALIVATION. In physiology, the admixture of saliva with the aliment during the act of mastication.

INSCONCED. In military science, a term used when any part of an army has fortified itself with a sconce, or small work, in order to defend a pass.

INSECT. A small winged or creeping animal; anything small or contemptible. In zoology, one of the third class of articulated animals, with a body composed of three distinct parts—the head, the thorax, and the abdomen; they have six legs and usually two or four wings attached to the thorax, two antennæ and a distinct head, and respire by means of spiracles or minute punctures along the sides of the abdomen. Insects undergo what is termed metamorphosis; the first of which is that of the larva; the second, pupa, or chrysalis; and the third, the imago, or perfect insect. The aptera, or wingless insects, however, issue from the ovum with the form they always possess.

INSECTIVORA. A family of vertebrate quadrupeds living on insects, including the shrew, hedgehog, and mole; an order of birds that feed on insects.

INSECT. A numerous class of invertebrate animals, whose bodies are composed of three distinct parts joined together, with three pairs of feet, and generally wings.

INSERTION. In pathology, the same as inoculation. In anatomy and botany, the intimate attachment of one part or organ to another, as the insertion of a ligament, muscle, or its tendon into a bone; or, in botany, that of a corolla, stamen, pistil, leaf, or ovary into any determinate point of a plant.

INSESSORES. In ornithology, an order of birds which perch on trees.

INSIST. In geometry, an angle is said to insist upon the arc of the circle intercepted between the two lines which contain the angle.

IN SITU. In mineralogy, a term frequently applied to minerals when found in their original bed or stratum.

INSPIRATION. In anatomy, the

act of breathing or taking in the air, by the alternate contraction and dilatation of the chest.

INSPIRATION (in Theology). The conveying certain extraordinary notices or motions into the mind; or, in general, any supernatural influence on the human mind.

INSTALLATION (in England). The ceremony of installing, or putting into any office or dignity, as placing a dean or prebendary in his stall or seat, or a knight into his order

INSTALMENT. The payment of a certain portion of a gross sum, which is to be paid at different times, or, as the phrase is, by instalments.

INSTANCE (in Civil Law). The prosecution of a suit.

INSTANT. The smallest perceptible portion of time; that wherein we perceive no succession.

INSTANTER. Instantly.

IN STATU QUO (in Diplomacy). A term signifying that condition in which things were left at a certain period, as when belligerent parties agree that their mutual relations should be in statu quo, or as they were before the commencement of a war, and the like.

INSTINCT. The sagacity or natural aptitude of brutes, which supplies the place of reason.

INSTITUTE. Any society instituted or established according to certain laws, or regulation for the furtherance of some particular object, such as colleges, or academies, as they are sometimes called, Literary Institutes, Mechanics' Institutes, and the like.

INSTITUTES. A book so entitled, containing the elements of the Roman or Civil Law The Institutes are divided into four books, and contain an abridgement of the whole body of the Civil Law.

INSTELLON. The region of stars, or that space beyond the solar system.

INSTEP. The fore-part of the upper side of the foot, near its junction with the leg. The instep of a horse is that part of the hind leg which reaches from the ham to the pastern-joint.

INSPEXIUS. The first word of ancient charters, confirming a former royal grant or charter.

INSTRUMENT. A tool to do any thing with.

INSTRUMENT (in Law). A deed or writing drawn up between two parties, and containing several covenants agreed between them.

INSTRUMENT (in Music). Any frame, structure, or contrivance, by which harmonious sounds may be produced.



INSTRUMENTAL (in Music). An epithet for the music of instruments, as distinguished from the vocal music, or that of the human voice.

INSULATE. Properly, standing alone; as, in Architecture, an insulate column, that which stands alone

INSULATED (in Chemistry). A term for bodies that are supported by electrics or nonconductors, so that their communication with the earth, by conducting substances, is interrupted

INSURANCE, or ASSURANCE (in Law). A contract or agreement by which one or more persons, called insurers or assurers, engage, for a certain premium paid, to make good the loss of any house, ship, or goods, by fire, shipwreck, or otherwise.

INSURANCE COMPANIES. Companies of persons who form a fund or capital, which they dispose of, in insuring the property of others against casualties by fire, &c.

INSURANCE OFFICE. The place where insurance companies conduct their business, of which there are many in London and in all the capitals of Europe, and America.

INTAGLIOS. Precious stones, having the heads of great men or inscriptions, &c. engraven on them, such as are to be seen on ancient rings, seals, &c.

INTEGER (in Arithmetic). A whole number, as distinguished from a fraction; as one pound, one yard, &c.

INTEGRAL PARTS. Parts which make up a whole.

INTEGUMENTS (in Anatomy). The coverings of any part of the body, as the cuticle, cutis, &c. The common integuments are the skin, with the fat and cellular membrane adhering to it, also particular membranes, which invest certain parts of the body, are called integuments, as the tunics or coats of the eye.

INTENDANT. A military officer, who has the inspection and management of certain affairs.

INTENSITY. The state of being affected to a high degree; the power or energy of any quality raised to its highest pitch

INTERCALATION (in Chronology) An inserting or putting in a day in the month of February every fourth year

INTERDICT. A papal censure prohibiting divine offices to be performed within any parish or town, &c.; which was put in force in England in the reign of King John, and in Germany several times at different periods.

INTEREST (in Commerce). Money

paid for the use or loan of money. The sum lent is called the principal; the sum paid by the borrower, the interest; and when the two are incorporated, the interest paid upon that is called compound interest, or interest upon interest.

INTEREST (in Arithmetic). A rule by which the interest of money is computed, which is either simple or compound.

INTERJECTION. An indeclinable part of speech, serving to express the emotions of the mind.

INTERLOCUTORY ORDER (in Law). An order which does not decide the cause itself, only some intervening matter relating to it.

INTERLOPERS (in Law). Those who, without legal authority, intercept or hinder the trade of a company, lawfully established to trade in a particular way or part.

INTERLUDE. An entertainment between the acts of a play, for the purpose of allowing the performers time to rest, &c.

INTERPOLATING (among Critics). Inserting a spurious passage, into the writings of some ancient author.

INTERREGNUM. In Europe, the vacancy of a throne, by the death or deposition of a king.

INTERREX. He who governs while there is no king.

INTERROGATION. A question put.

INTERROGATION, or NOTE OF INTERROGATION (in Grammar). A mark thus (?) put at the end of a question

INTERROGATIVES. Words used in asking a question, as why, wherefore, &c.

INTERROGATIVE SYSTEM. A mode of teaching by means of question and answer.

INTERROGATORIES (in Law). Questions in writing demanded of witnesses in a cause, particularly in the Court of Chancery.

IN TERROREM. By way of frightening or deterring.

INTERSECTION (in Mathematics). The cutting of one line or plane by another.

INTERVAL (in Music). The difference between two sounds, as respects acute and grave.

INTESTATE. One dying without a will.

INTESTINA (in Zoology). An order in the Linnæan system, of the class vermes, including earthworms and leeches.

INTESTINE MOTION (in Physiology). That motion which takes place in the corpuscles or smallest particles of a body.

INTESTINES. The convoluted membraneous tube in the body of animals. In the human subject, the intestines are divided into large and small, each of which consists of three distinct portions.

INTOLERANCE. The not tolerating or allowing of every man's private judgment, in matters of doctrine or discipline.

INTONATION (in Music). The act of sounding the notes in the scale with the voice, or any other given order of musical tones.

INTRANSITIVE VERBS. Verbs that express actions, that do not pass over to an object, as go, come, &c.

IN TRANSITU. During the passage from one place to another.

INTRUSION (in Law). A violent or unlawful seizing upon lands or tenements.

INTUITION. The mental view of a matter, or the instantaneous act of the mind, in perceiving the agreement or disagreement of ideas.

IN VACUO, i. e. In empty space, or in space comparatively empty.

INVALID (in Military or Naval Affairs). A soldier or sailor, wounded or disabled in war, and unfit for service.

INVENTION. Any new mechanical contrivance for assisting human labour.

INVENTORY. A catalogue or list of goods.

INVERSION (in Geometry). The changing antecedents into consequents in the terms of proportion, and the contrary.

INUNDATÆ (in Botany). One of the Linnæan natural orders, consisting of aquatic plants

INVOCATION (among Poets). An address to their favourite poet.

INVOICE. A bill or account of goods sent by a merchant to his correspondent in a foreign country.

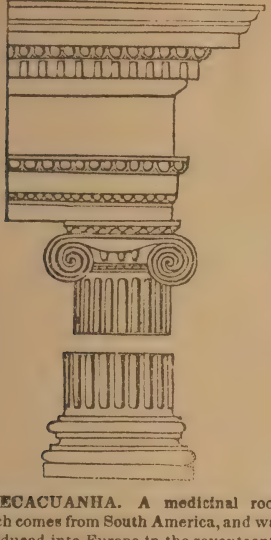
INVOLUNTARY HOMICIDE (in Law). The killing a man by accident, which differs from excusable homicide by misadventure in this, that the latter happens in the performance of a lawful act, but the former may be an indifferent or a positively unlawful act, which is murder or manslaughter according to the nature of the case.

INVOLUTION. The raising any quantity to a given power by multiplying it into itself the required number of times; thus, the cube of 3 is got by multiplying 3, the root, into itself twice, as $3 \times 3 \times 3 = 27$.

IODINE. A deadly poison, of a black colour and metallic lustre, procured from kelp, which resembles chlorine in its odour and power of destroying vegetable colours. Iodine is incombustible, but with azote it forms a curious detonating powder.

IONIC ORDER (in Architecture). An order so called from Ionia in Lesser Asia.

The body of the pillar is usually channelled or furrowed with twenty-four gutters, and its length, with the capital and base, is twenty-nine modules, the chapiter being chiefly composed of volutes or scrolls.



IPECACUANHA. A medicinal root, which comes from South America, and was introduced into Europe in the seventeenth century, when it was much esteemed for the cure of dysenteries, but afterwards fell into disuse.

IPSE DIXIT. Literally, he himself said it; a term signifying an opinion that rests on the word or authority of an individual only.

IPSO FACTO. The very fact.

IRIDIUM. A metallic substance procured from platina.

IRIS (in Anatomy). A striped, variegated circle, next to the pupil of the eye.

IRIS (in Botany). The flower de luce or flag-flower, &c.; a plant with a bulbous root, which bears a beautiful blue flower. There are many species of it, as the common yellow or water iris, the flag iris, the dwarf iris, &c.

IRIS (among Opticians). The changeable colours which appear in the glasses of telescopes, &c.

IRON. One of the most useful and abundant metals, which was one of the first metals that was known and worked. This metal is easily oxidized, but is infusible except by an intense heat; it is, however, malleable at a less degree of heat, and several pieces may be united into one mass, by a process called welding. Iron is the only metal that is susceptible of magnetic attraction. Pure iron is very rarely to be found; the principal varieties of iron are the cast or pig iron, or that which is immediately extracted from the ore; wrought iron, that which has gone through the process of melting in a furnace; and steel, that which has been heated in charcoal, and hardened by its combination with carbon.

IRON. The name of several tools made of iron, particularly that which serves, when heated, to smooth linen after it has been washed.

IRONMONGER. A dealer in iron The company of ironmongers in London, were incorporated in 1462.

IRONMOULDS. Spots in linen, left after ironing from stains of ink

IRONMOULDS (among Miners). Yellow lumps of iron or stone found in chalk-pits.

IRRATIONAL (in Mathematics). An epithet applied to surd quantities.

ISINGLASS. A gelatinous matter, formed of the dried sounds of cod and other fish. It is the principal ingredient in the blancmanger of the cooks, and is also used medicinally

ISIS (in the Mythology of the Egyptians) The wife and sister of Osiris.

ISLAND. A country surrounded on all sides with water, as Great Britain, Ireland, &c

ISLAND CRYSTAL. A transparent stone of the nature of spar, a piece of which laid upon a book, every letter seen through it will appear double. It was originally found in Iceland, whence it was called Iceland or Island Crystal, and is to be met with in France and other parts of Europe.

ISOCHRONAL or ISOCHRONOUS VIBRATIONS. Vibrations of a pendulum performed in the same space of time.

ISOPEREMETRICAL FIGURES. Figures having equal perimeters or circumferences.

ISOSCELES TRIANGLE. A triangle having two sides or legs equal to each other.

ISSUE (in Law). 1. The children begotten between a man and his wife. 2. The profits arising from lands, tenements, fines, &c. 3. The point of matter at issue between contending parties in a suit, when a thing is affirmed on the one side, and denied on the other. Issues my be either on matters of fact, or matters of law.

ISSUE (in Medicine) An artificial

aperture, giving vent to noxious humours in the body.

ISSUES (in Military Affairs) Certain sums of money given into the hands of agents, for the payment of the army.

ISSUES (in Fortification). Outlets in a town.

ISTHMIAN GAMES. Games formerly celebrated by the Greeks at the Isthmus of Corinth every three, four, or five years.

ISTHMUS. A little neck of land joining a peninsula to a continent, as the Isthmus of Corinth, &c.

ITALIC. A kind of letter used in printing, by way of distinction from the Roman, as in this word, *Italy*.

ITCH. A cutaneous disease, supposed to be caused by an insect of the acarus tribe called the itchmite. This small insect, which is white, with reddish legs, is found in the small pellucid vesicles of the hands and joints infected with the itch.

ITTNERITE. A bluish mineral, consisting of silica, alumina, lime, soda, peroxide of iron, and water: sp. gr .2·38; H = 7·0.

ITTRIA, YTTRIA. A non-acid compound of the metal ittrium or yttrium with oxygen.

IXODES. The name of a genus of parasitical Acari found on the skins of domestic quadrupeds.

IXOLITE. A mineral of a greasy lustre, found in bituminous coal.

IVORY. A finer sort of bone, or an intermediate substance between bone and horn, prepared from the tusk of the male elephant.

IVY. A parasitic or twining plant, that runs about trees, walls, &c. by means of roots and fibres from its branches.

## J.

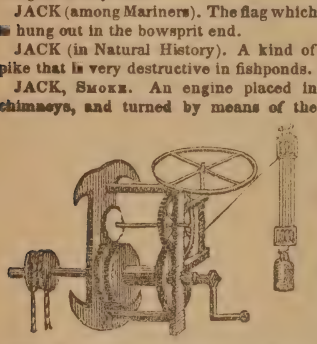
J, the tenth letter of the alphabet.

JACK (in Mechanics). An instrument in common use for raising very great weights of any kind.

JACK (among Mariners). The flag which is hung out in the bowsprit end.

JACK (in Natural History). A kind of pike that is very destructive in fishponds.

JACK, Smoke. An engine placed in chimneys, and turned by means of the



ascending smoke, which answers the purpose of the kitchen jack.

JACKAL A beast of prey nearly allied

to the dog. It follows the lion and feeds upon the remains of animals he has killed

JACKDAW. A bird of the crow kind having a white collar about its neck.

JACKS. Small bits of wood fixed to the keys of virginals, harpsichords, and spinnets.

JACK-WITH-THE-LANTERN, or Will-o'-the-Wisp. Vulgar names for the ignis fatuus or meteor, which hovers in the night about marshy places, and seems to be mostly occasioned, by the extrication of phosphorus from rotten leaves, and other vegetable matters. It appears like a candle in a lantern, and has sometimes caused travellers to lose their way.

JACOBIN. A partisan of the French revolution.

JACOBITES. A name given to the adherents of James II. at and after the revolution in England

JACOB'S STAFF. A mathematical instrument for taking heights and distances

JACOBUS. A gold coin in the reign of James I. current at 20*s*. 23*s*. and 25*s*.

JACTITATION OF MARRIAGE. In England, a suit in the ecclesiastical court, when one of the parties boasts or gives out that he or she is married, which the other party denying, and no adequate proof of the marriage being brought, the offending party is enjoined silence on that head.

JADE. See Nephrite

JAG (in Botany). A division or cleft in a leaf.

JALAP The root of a West Indian plant, of the convolvulus tribe, of a black colour on the outside, and reddish within

with resinous veins. It was not known in England until after the discovery of America, and received its name from Xalapa, a town in New Spain. The principal constituent parts of jalap are resin and starch.

JAGUAR. An animal of the cat kind, resembling the panther; it is found in the northern part of South America, and in Mexico

JAMB (among Carpenters). Any supporter on either side, as the posts of a door.

JAMB (among Miners). A thick bed of stone that obstructs the miners in their pursuing the veins of ores.

JANIZARIES. The grand seignior's guard, or the soldiers of the Turkish infantry, which have lately been abolished, and their places supplied by troops trained after the European manner.

JANUARY. The first month in the year, supposed to take its name from Janus, an ancient king of Italy.

JAPANNING. The art of varnishing and painting figures on wood, metal, &c. as is practised by the inhabitants of Japan, &c.

JAPONICA. The Japan rose.

JAR. A measure of capacity, as a jar of oil, containing from 18 to 26 gallons

JASMIN. See JESSAMINE.

JASPER. A precious stone of a green transparent colour, with red veins. It is a sort of silicious earth, consisting mostly of silica, with a small portion of alumina oxide of iron, magnesia, and potash.

JAVELIN. A sort of half pike or spear.

JAUNDICE. A disease proceeding from obstructions in the glands of the liver, which causes the bile to overflow, and turns the complexion yellow.

JAW. A bone of the mouth, in which the teeth are fixed.

JAWS. The two pieces in the cock of a gun between which the flint is fixed.

JEHOVAH. The proper name of the Most High in the Hebrew.

JELLY. Any liquid, as the juice of fruits, coagulated into a tremulous, soft substance: when long boiled it loses the property of gelatinizing, and becomes analagous to mucilage.

JERBOA. A lively little animal shaped like the Opossum of the size of a rat, and found in Egypt, and the adjacent countries.

JAY. A bird with particoloured plumage, some varieties of which may be taught to speak. The blue jay of America is remarkable for its brilliant plumage.

JERUSALEM ARTICHOKE. A sort of sunflower, which resembles the artichoke in taste.

JESSAMINE, or JASMIN A plant bearing fragrant flowers, which is commonly trained to the walls of houses.

JESUITS, or the ORDER OF JESUS. A religious order founded by Ignatius Loyola in 1538, and abolished in 1773, on account of their intrigues, but partially restored since.

JESUITS BARK. The Cinchona or Peruvian Bark, so called because it was first used by the Jesuit missionaries in Peru.

JET (in Mineralogy). A deep black sort of bitumen.

JET D'EAU. The pipe of a fountain which throws up the water in the air.

JETSAM (in Law). Any thing thrown out of a ship which is in danger of a wreck

JEU D'ESPRIT. A lively, pretty thought.

JEWEL The name of the precious stones which are worn as ornaments.

JEWELLER. One who works or deals in jewels and all kinds of precious stones.

JEWEL OFFICE. In England, an office where the king's plate is fashioned, weighed, and delivered out by the warrant of the lord chamberlain

JEWS. The descendants of the twelve tribes of Israel, who were so called after their return from the captivity of Babylon, from Judah, one of the sons of Jacob, whose tribe formed the most considerable part of those that remained of the Israelites Although the Jews have lost the distinction of their tribes, and are dispersed throughout

all nations, yet they remain a perfectly distinct people, and adhere to the religion of their forefathers. Their condition has been considerably ameliorated in all Christian countries where they now reside.

JEW'S-EAR. A kind of mushroom.

JEW'S-HARP. A musical instrument which is played between the teeth.

JEW'S-MALLOW. A plant whose leaves are produced alternately at the stalks. The flower expands in the form of a rose.

JIB. The foremost sail of a ship.

JOBBER. One who buys and sells for another.

JOCKEY. A man who rides horses at races.

JOHN DOREE. A species of fish.

JOINER. A worker in wood, who fits together the several pieces which have been prepared for each other. He differs from the carpenter, inasmuch as he does the finer work, that requires more skill. The company of joiners in London, was incorporated in 1570.

JOINT (in Anatomy). The place where any bone is articulated, or joined with another.

JOINT (in Masonry). The separation between the stones, which is filled with mortar.

JOINT (in Joinery). The parts where two pieces of wood join.

JOINT (in Botany). The knot in the stalk of a plant.

JOINT (among Butchers). The limb that is cut from the carcass of an animal.

JOINT STOCK (in Commerce). A stock or fund, formed by the union of several shares from different persons.

JOINT STOCK COMPANIES. Commercial associations, having a stock consisting of many shares: in such associations the shareholders gain or lose, according to the number of shares which they hold.

JOINTURE (in Law). A settlement of lands and tenements made over by the husband to the wife, to be enjoyed after his decease.

JOISTS. Timbers framed into the girders, or sommers of a building.

JONQUIL. A plant of the Narcissus kind, the flowers of which are either single or double, and are much esteemed for their sweet scent.

JOURNAL. Any book in which is kept an account of what passes in the day.

JOURNAL (in Merchants' Accounts). A book wherein every thing is posted out of the waste-book.

JOURNAL (among Publishers and Booksellers). A periodical work, either daily, weekly, or monthly, &c.

JOURNAL (among Mariners). A book wherein is kept an account of the ship's way at sea.

JOVE. The name of the supreme deity among the Romans: Jupiter; the planet Jupiter; the air or atmosphere, or the god of the air. In alchemy, tin.

JOURNEYMAN. One who works by the day, the week, or the year, &c. for another.

JUBILEE. Every fiftieth year, celebrated as a festival among the Jews, in commemoration of their deliverance out of Egypt. At this festival, which was a season of joy, bondservants were set free.

JUBILEE (in the Romish Church). A solemnity instituted A. D. 1300, by Pope Boniface, to be observed every hundredth year, or every twenty-fifth year, as enjoined by Pope Sixtus IV. for the performance of several ceremonies in order to obtain pardons, remissions from sins, indulgences, &c. The jubilee lasts a whole year, and as it brings in great stores of wealth to the popes, it has been called the Golden Year.

JUDAISM. The rites, customs, and doctrines of the Jews.

JUDGE (in Law). A chief magistrate appointed to administer justice in civil and criminal causes.

JUGATE. In botany, a term applied to the leaflet pairs in compound leaves.

JUGULAR. Pertaining to the throat or neck. Jugular veins are the veins which bring the blood from the head down the sides of the neck. By their union with the subclavian vein, they form the superior vena cava, which terminates in the superior part of the right auricle of the heart. Jugulars, in ichthyology, comprehend that class of fishes which are distinguished by having ventral fins anterior to the pectorals.

JUDGE MARTIAL, or JUDGE ADVOCATE, or ADVOCATE GENERAL. The supreme judge in courts martial.

JUDGMENT (in Law). The sentence of the court, pronounced by the judge on the matter in the record, either in cases of default, where the defendant puts in no plea; or of confession, when the defendant acknowledges the action; or upon demurrer, where the defendant pleads a bad plea in bar; or upon a nonsuit or retraxit, where the plaintiff withdraws or abandons the prosecution. Judgments are either interlocutory, that is, given in the middle of a cause on some intermediate point, or final, so as to put an end to the action.

JUDICIAL (in Law). An epithet for

what appertains to a court, as judicial decisions, &c.

JUJUBES. In the materia medica, a fruit of the pulpy kind, produced on a tree which Linnæus considers as a species of Rhamnus.

JULEP. In medicine, mucilaginous mixture.

JULUS. In botany, a catkin: an inflorescence of the Willow, Hazel, &c.

JULIAN PERIOD (in Chronology). A period of 7980 consecutive years, produced by the multiplication of the three cycles of the sun, moon, and indiction into one another. It was so called because it consists of Julian years

JULIAN YEAR. A space of time consisting of 365 days and 6 hours, so called from Julius Cæsar, by whom it was established. The calendar, which contained an account of Julian time, was called the Julian Calendar; and the time when it was first instituted, namely, 46 A. C., the Julian Epocha.

JULY. The seventh month in the year, so called in honour of Julius Cæsar.

JUNIPER TREE. A sort of tree or shrub, having long, narrow, and prickly leaves, and bearing a soft pulpy berry. This shrub is common on heaths and barren hills, but the berries which are used medicinally are brought from Germany. From the berries is made, in Holland, the gin called Hollands gin

JUNO (in the Heathen Mythology). The wife of Jupiter, whose emblem was the peacock.

JUNO (in Astronomy). One of the newly discovered planets.

JUNTA. A Spanish term for a meeting of men sitting in council.

JUPITER (in Astronomy). One of the largest of all the planets, being, according to some, upwards of two thousand times bigger than our earth. It is the most brilliant star after Venus, revolves on its own axis in 9 hours and 56 minutes, and performs its revolution round the sun in 4332 days 14 hours 18 minutes and 41 seconds.

JUPITER (in the Heathen Mythology) The son of Saturn and Ops, and chief of the gods, was the most honoured among men. His most usual attributes are the eagle, and thunder, and sometimes a figure of victory, and a spear, &c.

JURISDICTION. The power or authority invested in any individual or court, of doing justice in the causes brought before them.

JURISPRUDENCE. Properly, a knowledge of the laws, or skill in interpreting and applying them; also the laws themselves, together with all that relates to their administration. English jurisprudence comprehends the common and statute law, together with such parts of the civil and canon law as have been admitted into their courts.

JURY (in Law). A certain number of persons sworn to inquire of, and to declare the truth upon the evidence offered to them relating to the matter of fact. Juries are of different kinds, as the grand jury, petty jury, special jury, common jury, coroner's jury, &c. The grand jury, consisting of twenty-four persons, is chosen to consider all bills of indictment preferred to the court, which they return as true, by writing upon them, 'billa vera,' true bill, or throw out by indorsing the word 'ignoramus.' The petty jury, consisting of twelve men, is chosen to try all causes civil and criminal: in the latter causes they give a verdict of Guilty, or Not Guilty; in civil causes, they bring a verdict either for the plaintiff or the defendant; and in real actions, either for the demandant or tenant. A jury is called special, when it is returned for a particular cause, and common when it is returned by the sheriff in the same panel, to try every cause at the same court.

JURYMAN. One who is sworn on a jury

JURY-MAST. A great yard used in the place of the foremast or mainmast, when it is broken down by a storm.

JUNGERMANNIACEÆ. In botany, a natural order of Acrogens, consisting of creeping moss-like plants, of which Jungermannia is the genus and type.

JUNKERITE. A crystallized mineral of a yellow-grey color, consisting of protoxide of iron, carbonic acid, silica, and manganese: sp. gr. 3·8; H=3·81.

JUSSI. A textile fibre produced in Manilla, of which dresses, &c., are made.

JUTE. An annual plant common in Bengal, from which a coarse kind of cloth is woven, and of which the gunny-bags are made.

JUTES. An old Teutonic or Scandinavian tribe from Jutland, who invaded England in the fifth century.

JUWANZA. The name of the camel's thorn (Alhagi Maurorum), which furnishes the manna of the desert, and is used for making screens, &c.

JUXTAPOSITED. Placed near; adjacent or contiguous.

JUXTAPOSITION. The state of being placed in nearness or contiguity.

JUZAIL. A heavy rifle used by the Affghans.

JURASSIC. In geology, a term applied to the oolitic system, and so called from its occurrence in the Jura mountains of Switzerland.

JUREMA BARK. An astringent bark obtained from the Acacia jurema of Brazil.

## K.

K, the eleventh letter in the alphabet, stood as a numeral for 250, with a stroke over it thus, $\bar{K}$, for 250,000; as an abbreviation, it stands for Knight, as K. G. Knight of the Garter, K. B. Knight of the Bath.

KALE. A hardy kind of winter cabbage, with a curled leaf.

KALEI DOSCOPE. An optical instrument for exhibiting a diversity of beautiful figures, invented by Dr. Brewster. It is chiefly used by calico-printers, potters, and carpet manufacturers, who are thus supplied with an immense variety of patterns.

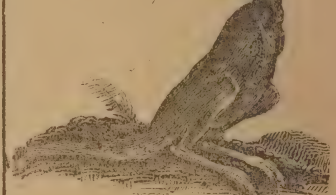
KALI (called in Botany SALSOLA KALI). A sort of marine plants, from which the alkali of commerce is procured by burning.

KALMUCS. A nation of Tartars inhabiting parts of Russia in Asia.

KAMSIN. A hot and dry southerly wind, common in Egypt and the deserts of Africa, which prevails more or less for fifty days. On the approach of this wind the sky becomes dark and heavy, the air gray and thick, and filled with a dust so subtle that it penetrates everywhere. It is not remarkably hot at first, but increases in heat the longer it continues, during which time it causes a difficulty of breathing, and when at its highest pitch, will cause suffocation and sudden death. To prevent this, it is necessary to stop the nose and mouth with handkerchiefs.

KAN. A magistrate in Persia, answering to a governor in Europe.

KANGAROO. An animal in Australia, which, when full grown, is as large as a sheep. It leaps and eats like a squirrel. It is furnished, like the opossum, with a pouch in the abdomen, which is a receptacle for its young during the time of breeding, and is resorted to after the birth for the sake of warmth and protection. It is said to leap thirty yards at a single bound.



KAOLIN. A sort of earth which is used as one of the two ingredients in porcelain.

KECKLING (among Mariners). Winding or twining small ropes about a cable or bolt-rope, to preserve them from galling.

KEDGER. A small anchor.

KEDGING (among Mariners). Setting up the sails, and letting a ship drive with the tide, when the wind is contrary to the tide.

KEEL. The lowest piece of timber in a ship, running her whole length. Sometimes a second kee., or false keel, as it is

called, as put under the first. This name is also given to a low flat bottomed vessel used in the river Tyne, in England, for bringing coals from Newcastle.

KEELERS (among Mariners). Small tubs use in calking ships.

KEEL-HAULING (among Mariners). A punishment of offenders at sea by letting them down with ropes, and drawing them under the keel from one side to the other.

KEELSON (in Naval Architecture). A principal timber in a ship, laid withinside across all the timbers.

KEEP. A strong tower in old castles, where the besieged retreated in cases of extremity.

KEEPER (in England). An officer of different descriptions, as the Keeper of the Great Seal, a lord by his office, and one of the Privy Council, through whose hands pass all charters, commissions, and grants of the king under the Great Seal; Keeper of the Privy Seal, through whose hands pass all charters, &c. before they come to the Great Seal; besides which there is the Keeper of the Forests, the Keeper of the Touch, an officer of the Mint, &c.

KEEPING (among Painters). The management of lights and shades, so as to preserve the proper distances of objects according to the rules of perspective.

KEG. A barrel for pickled fish.

KELP. The ashes of the salsola soda and other marine plants, which, when burnt in pits, and stirred about for a length of time, form hard masses, that are used in making soap. In this manner the mineral alkali called soda is procured.

KENNEL (among Sportsmen). A place in which dogs are kept; also the hole in which a fox lies.

KERMES. A round body of the size of a pea, and of a brownish-red colour, which contains a number of soft granules filled with a red colour. It is found in the southern parts of Europe adhering to the scarlet oak, and was till lately supposed to be a vegetable excrescence, but is now known to be the extended body of an animal filled with a numerous offspring, which are the little red granules.

KERMES MINERALIS. A preparation of antimony, so called from its beautiful deep orange colour.

KESTREL. A small kind of hawk.

KETCHUP. The liquor of mushrooms, which is much used as a sauce.

KETTLE-DRUM. A drum, the vellum head of which is spread over a body of brass.

KETTON STONE. An opaque compact sort of marble found in different parts of Britain.

KETCH. A strongly built ship with a main and a mizzen mast.

KEY (among Smiths). An instrument for opening a lock, having cavities to correspond to the wards of the lock.

KEY (in Gunnery). The firelocks and springlocks of gun-carriages.

KEY (in Carpentry). The last board that is laid.

KEY (in Music). A name for the pieces of wood or ivory in an organ or harpsichord, which are struck by the finger in playing an instrument; also the fundamental note, otherwise called the cleff or cliff.

KEY (in Commerce). The same as QUAY.

KEY, or GOLD KEY (in Court Etiquette). In England, the key which is worn by the Lords of the Bedchamber.

KEYS (in Naked Flooring). Pieces of timber framed in between every two joists.

KEYS (in Joinery). Pieces of timber let in transverse to the fibres, into the back of a board.

KEYS (in England). The twenty-four commoners in the Isle of Man, who are the conservators of the liberties of the people.

KEY-STONE (among Architects). The name for those stones which form the sweep of an arch, particularly the last or middle stone placed on the top of the arch or vault.

KIDNAPPING (in Law). The forcible taking away a man, woman, or child, in order to carry them abroad. This is an offence at common law, and punishable by fine, imprisonment, and pillory.

KIDNEY-BEAN. A garden pulse having a papilionaceous flower, the pistil of which becomes a long pod, that is eaten before the seeds are fully formed.

KIDNEYS. Glands shaped like a kidney-bean, which separate the urine from the blood. There are two kidneys, one in each lumbar region.

KILDEER PLOVER. A well known bird that frequents open grounds and constantly cries Kildeer.

KILDERKIN. A liquid measure containing eighteen gallons.

KILN. A furnace in which chalk is burnt for making lime; also a place where bricks, tiles, and malt are burnt or dried.

KILN-DRYING. The process of drying wetted barley on a kiln for the purpose of making malt.

KIND (in Law). In their natural state, as tithe in kind, that is, in the commodities themselves as distinguished from their value in money; so, in Military Affairs, ratios supplied in kind.

KINDRED (in Law) Persons of the same blood or descent.

KING. The sovereign ruler of a state. The law ascribes to the king of England, in his political capacity, immortality, for the king never dies; and on his decease, which is called his demise, his regal dignity is vested, without any interregnum or interval, at once in his heir

KING AT ARMS (in Heraldry). An officer at arms, that has the preeminence over the rest, and is otherwise called Garter King at Arms.

KING BIRD. An American variety of the fly-catcher, sometimes called the tyrant fly-catcher, from his constant attacks upon other birds.

KINGDOM (in Law) Any country governed by a king.

KINGDOM (in Natural History). A general division of natural objects, as the animal, the mineral, and the vegetable kingdoms in the Linnæan system.

KING-FISH. A European fish of remarkably splendid colours.

KING-FISHER. A bird that feeds on

fish, whose plumage resembles the purple colour of the king's robes.

KING'S BENCH, Bancus Regius, or B R. The supreme court of common law in England, consisting of the Lord Chief Justice, and three puisne or inferior judges, who hear and determine, for the most part, all pleas which concern the king's crown and dignity.

KING-PIECE, or King-Post (in Carpentry). The chief beam under the roof.

KING'S BENCH PRISON (in England) A prison wherein debtors, and offenders against the state, are confined.

KING'S EVIL. A scrofulous disease, in which the glands are ulcerated, the gift of curing which, was formerly attributed to the kings and queens of England from the time of Edward the Confessor The practice of touching the king or queen for the evil, is now abolished.

KING'S SILVER (in England). Money due to the king in the Court of Common Pleas, for a license there granted to any man for passing a fine.

KIRK. The Scotch Presbyterian church.

KITE. A bird of prey, of the falcon kind, the tail of which is forked, and distinguishes it from all other birds of prey

KITE. A plaything among schoolboys, consisting of a slight wooden frame covered with paper, and constructed so as to rise

in the air. By the help of a long string it may be allowed to fly at the pleasure of the person holding it.

KNEES (in Naval Architecture) Pieces

of timber bowed like a knee, which bind the beams and futtocks together.

KNAPSACK. A leathern bag in which soldiers carry their provisions, &c.

KNEE. That part which joins the leg and thigh together.

KNEE-PAN. A little round bone placed in the fore part of the knee.

KNELL. A passing bell, anciently rung at the time when a person was about to expire.

KNIGHT (in England). A title of honour, originally bestowed on every man of rank or honour, that he might be qualified to give challenges, and to perform feats of arms. It is now an order of gentlemen next to baronets, or a mere honorary distinction, which entitles the person on whom it is conferred to be styled Sir D. D., and his wife Lady D. D. A knight is now made by the king touching him with a sword as he kneels, and saying, 'Rise up, Sir D. D.'

KNIGHTS BACHELORS (in England). A description of knights inferior to the knights bannerets.

KNIGHTS BANNERETS (in England). Knights so called, that were created knights on the field for some valiant achievement.

KNIGHTS OF THE SHIRE (in England) Two knights or gentlemen of estate, who are elected by the freeholders of every county, to represent them in Parliament The qualification of a knight of the shire is to be possessed of 600l per annum in a freehold estate.

KNITTING. The process of weaving without a loom, by the help of a needle, also the act of tying together certain quantities of yarn, and then warping them into hanks to be tarred.

KNOT (among Mariners). Any large knob formed on the extremity of a rope; also the division of the log line, answering to half a minute, as a mile does to an hour.

KNOT (in Ornithology.) A fen-bird, the flesh of which is very delicious.

KNOUT. A Russian punishment, which consists in barbarous scourging, slitting the nostrils, and maimings of different kinds.

KORAN The book of the Mahometan doctrine, containing the revelations of their pretended prophet.

KOUMISS. A fermented liquor made by the Tartars, of mare's milk. Something similar is prepared in the Orkney and Shetland Isles.

KREMLIN. The palace at Moscow, standing in a central and elevated part of the city, which suffered but little in the conflagration that followed the entry of the French in 1812. It was built in the fifteenth century.

KT (in England). An abbreviation for Knight.

K. T (in England). An abbreviation for Knight of the Thistle.

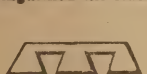
## L

L, the twelfth letter in the alphabet, denoting, as a numeral, 50, and with a line over it thus $\bar{L}$, 50,000; as an abbreviation, l stands for libra, pound, and liber, book.

LA (in Music). The syllable by which Guido denoted the last sound of each hexachord

LABEL (among Mechanics). A thin brass ruler, with sights, commonly used with a circumferentor, to take heights.

LABEL (in Heraldry). A figure supposed to represent riban is, which in coats of arms distinguished the eldest son of a family



LABEL (in Law). A slip fastened to deeds or writings, or any paper joined by way of addition to a will.

LABIAL LETTERS Letters requiring the use of the lips in pronunciation.

LABORATORY. A chemist's work shop; also a workhouse where fireworkers and bombardiers prepare their stores.

LABOURER. One who does day labour.

LABYRINTH. A maze, o place ful of intricate windings. The l yrinth of Egypt, built by Psammiticus on the banks of the river Nile, contained, within the compass of one continued wall, one thousand houses and twelve royal palaces, all covered with marble; it had only one entrance, but innumerable turnings and windings, so that those who were in could not find their way out without a guide. This labyrinth was reckoned one of the seven wonders of the world.

LAC. A substance well known in Europe under the different names of stick-lac, shell

ac, and seed-lac. Stick-lac is the lac in its natural state; seed-lac is the stick-lac separated from the twigs; shell-lac is that which has undergone the process of being purified. Lac was for some time supposed to be a gum, but improperly so, because it is inflammable, and not soluble in water. It is the product of the coccus lacca, which deposits its eggs on the branches of a tree in Thibet, and elsewhere in India, where lac is fashioned into rings, beads, and other trinkets. Sealing wax, varnishes, and lake for painters, are made from it, and it is also much used as a dye.

LACCIC ACID (in Chemistry). An acid procured from gumlac, the component parts of which are supposed to be carbon, hydrogen, and oxygen.

LACE (in Commerce). A work composed of many threads of gold, silver, or silk interwoven, and worked by means of spindles on a pillow, according to the pattern designed.

LACHRYMAL. An appellation given to several parts of the eye, from their serving to secrete or convey away the tears, as the lachrymal ducts, the lachrymal gland, the lachrymalia puncta, &c.

LACING (among Mariners). The rope or line used to confine the heads of sails to their yards.

LACK (in Commerce). The number of 100,000 rupees in India.

LACKER, or LACQUER. A sort of varnish applied to tin, brass, or other metals. The basis of lacker is a solution of the resinous substance of seed-lac in spirit of wine. In order to give a golden colour to the solution, two parts of gamboge are added to one of anotto. When silver leaf or tin is to be lackered a larger quantity of the colouring materials is requisite than when the lacker is intended to be laid on brass.

LACTEAL VESSELS (in Anatomy). Tender transparent vessels which convey the chyle from the mesentery to the thoracic duct.

LACTIC ACID. An acid procured from sour milk by precipitating it with lime-water and separating the lime with oxalic acid. It is supposed to consist of acetic acid and muriate of potash, with a small portion of iron and an animal matter.

LADDER. A wooden frame made with steps for mounting.

LADDER, SCALING (in Fortification). A particular kind of ladder made of ropes or flat staves, with which the men scale the walls of a place that is to be taken by surprise.

LADY-BIRD. A small red insect with black spots

LADY'S SLIPPER. A plant which grows wild, the flower of which is something in the shape of a shoe.

LADY'S SMOCK. A plant that grows wild, the flower of which consists of four leaves succeeded by narrow pods, which, when ripe, roll up and cast forth their seeds.

LAIR (among Sportsmen). The place where deer harbour by day.

LAIRD. The name of a lord of a manor in the highlands of Scotland.

LAITY. The people, as distinguished from the clergy.

LAKE (in Geography). A collection of waters in an inland place of great extent and depth, as the Lake of Geneva, &c.

LAKE (in Painting). A fine crimson colour, between carmine and vermilion. It is formed by precipitation from the solution of the colouring matter with an earth or metallic oxide. Precipitates of different shades are obtained with alum, nitre, chalk, &c.

LAMA (in Theology), or the GRAND LAMA OF THIBET. The prince and high-priest of the country, who is supposed to be immortal, and on the dissolution of his mortal frame his soul enters into the body of a new born child. He is worshipped as a supernatural being by his subjects, and is never to be seen but in the secret recesses of his palace, where he sits cross-legged on a cushion.

LAMB. The young of sheep while under a year old.

LAMINA. A thin plate of any metal

LAMINÆ (in Anatomy). Are the two thin plates or tables of the skull.

LAMMAS DAY. The first of August, formerly a day of thanksgiving.

LAMP. A light made of oil and a wick: also the vessel to receive the oil and the wick.

LAMPBLACK. A colour procured from the smoke of burning oil mixed with gum water.

LAMPERS. A disease in the palate of a horse's mouth.

LAMPREY. A sort of fish which adheres firmly to rocks and other bodies by the mouth. It is in shape like an eel, and

so slippery. Lampreys are esteemed as a delicacy, and are in season in the months of March, April, and May.

LANCE. An offensive weapon formerly used by knights in their tilts and tournaments.

LANCERS (in Military Affairs). A body of men in Poland armed with long lances and mounted on swift horses.

LANCET (in Surgery). An instrument used in bleeding, opening tumours, &c.

LAND (in Geography). One main division of the earth, as distinguished from water; in Law, land includes not only arable land, meadow, pasture, &c. but also, messuages and houses, for in conveying the land the buildings pass with it.

LAND FALL (among Mariners). The first land discovered after a voyage.

LAND FORCES (in Military Affairs). Troops employed only on land.

LANDGRAVE. The governor of a district in Germany.

LANDING. Going on land out of a boat or vessel.

LANDING (in Architecture). The first part of a floor at the head of a flight of stairs.

LANDLOCKED. A sea term for a vessel when she is at anchor in a place not open to the sea.

LANDLORD (in Law). He of whom lands or tenements are held.

LANDMAN. One on board a ship who has never been before to sea.

LANDMARK (in Husbandry). A boundary set between the lands of different persons.

LANDMARK (among Mariners). Any mountain or other object which may serve to make the land distinguishable at sea.

LANDSCAPE (in Painting). A picture representing any part of a country, with the various objects of fields, trees, hedges, houses, &c.

LANDSTURM. In military affairs, a local militia of Prussia, which is never called from its own district but in case of actual invasion.

LANGUAGE. Human speech in general, or an assemblage of articulate sounds forming words and signs for the expression of the thoughts of the mind.

LANGUAGE, HISTORY OF. That all men at first spoke one language we know the authority of Scripture, and that t language must have been the Hebrew, the Holy Language, as it is called by the Jews, in which God was pleased to reveal his word to man, is clearly deducible from Scripture In giving the names of Adam and many of his posterity, the inspired penman expressly declares them to be of Hebrew origin, for of Adam he says that he was expressly so called from the Hebrew Adam, earth, because he was made out of the dust of the earth, and in a similar manner he explains the names of Cain, Abel, Abram, Isaac, Jacob, and others. When God thought proper to confound the tongues of men, he reserved the Hebrew tongue for his chosen people, who, in that tongue, were to keep and hand down his oracles to future ages.

Judging from the deviations which the earliest languages underwent, it does not appear that any new language was formed in the confusion of tongues at the tower of Babel, nor in fact that any other change took place than what was needful to answer the divine purpose of causing the dispersion of mankind. The Chaldeans or Babylonians being one of the first people formed after the flood, we find that their language, which has been handed down to us unchanged, differs the least of any from the Hebrew. The Syriac, which was spoken by the Canaanites, was in its primitive state so nearly allied to the Hebrew that Abraham understood their speech; and although the Syriac which is now extant, and which was spoken by the inhabitants of ancient Syria, underwent many changes by the intercourse of different people, yet it still retains many vestiges of its origin. In the time of Joseph, the language of the Egyptians, which is still extant under the name of Coptic, was so different that the Israelites required an interpreter in order to be understood, but notwithstanding they retained in their letters and in many of their words marks of their affinity to the Hebrew. This great diversity in the language of the Egyptians, the descendants of Ham, within so short a period after the flood, is not surprising when we consider the peculiar character of this people for invention and device

The Arabian is another language which from the antiquity of the people was probably formed at or very soon after the confusion of tongues. It is also very different from all the other tongues then existing, and surpassed them all in the number of its letters and the harmony and richness of its expression, but still it carries with it innumerable marks of its affinity to the Hebrew. The Æthiopian was in all probability a dialect of the Egyptian, at least in the names of its letters it is very similar to that language; but Ludolf observes that it bears a great affinity to the Hebrew and the Syriac, and a still greater to the Arabic, from which he supposes it

to be derived. In fact, he maintains that competent knowledge of the Hebrew, or any other of the oriental languages, will enable a person to understand very much of the Ethiopic, there being several Hebrew roots and significations of Hebrew words in this language which are not to be found in any other.

As the Phœnicians, the descendants of the Canaanites, inhabited the maritime parts of the land of Canaan it is not surprising that their language should be supposed to have been nearly the same as the Hebrew. Some vestiges of this affinity are to be found in the proper names of the Carthaginians, their descendants, who spoke a dialect of the Phœnician called the Punic language: this latter language is also said to have had a tincture of the Chaldee and Syriac, which may be easily accounted for by the intercourse which these two trading nations held with all other people. A writer in modern times has also shown that the Maltese contains a number of Punic words, from which it is justly inferred that Malta was once in the possession of the Carthaginians.

The Persian, as it is now handed down to us, is confessedly posterior to the Arabic, to which it is nearly allied both in its primitive letters and whole construction, but it has been shown by writers that the Parthians or Persians were Scythians who mingled with the Elemites or original inhabitants of Persia, and gave to the Persian language that Celtic tincture which brings it nearer in accordance with the northern language of Europe. In the language of India and Armenia there are strong marks of resemblance to the Persian; but as to the Chinese it was probably one of the earliest tongues formed after the flood, as it bears few or no marks of affinity to any but the Hebrew.

In proof of what has been advanced on the oriental languages the following alphabets are given:—

| HEBREW AND CHALDEE. | SYRIAC. | COPTIC. | | ETHIOPIC. | ARABIC | ARMENIAN. | |
|---|---|---|---|---|---|---|---|
| Aleph | Olaf | Alpha | Phi | Alf | Elif | Ail | Ue |
| Beth | Beth | Bida or | Chi | Bet | Be | Bien | Tsche |
| Ghimal | Gomal | Bita | V | Gemi | Gain | Gim | Pe |
| Dhaleth | Daleth | Gamma | Shei | Dant | Dal | Da | Dsche |
| He | He | Dalda | Fei | Haut | Dsel | Jetsch | Rra |
| Vau | Waw | Ei | Kher | Waw | He | Za | Se |
| Zain | Zain | Se | Hori | Zai | Waw | E | Wiev |
| Cheth | Heth | Zide | Jauja | Hharm | Gim | Jeth | Tuim |
| Teth | Teth | Hida | Shima | Tali | Hha | Thue | Re |
| Jod | Yud | Thita | Dbei | Jamen | Ta | Je | Tsue |
| Chaph | Cof | Jauda | Epai | Caf | Ye | J | Hiwn |
| Lamed | Lomad | Kappa | | Lawi | Caf | Luim | Pniur |
| Mem | Mim | Lauda | | Mai | Lam | Chhe | Kha |
| Nun | Nun | Mi | | Nahas | Mem | Dza | Fr |
| Samech | Samecth | Ni | | Saat | Nun | Kien | G |
| Gnain | E | Exi | | Ain | Sad | Hue | |
| Phe | Pe | O | | Af | Ain | Den | |
| Tsadi | Sode | Pi | | Tzadai | Fe | Ghat | |
| Koph | Kof | Ro | | Kof | Kaf | Tso | |
| Resh | Rish | Sima | | Reca | Ka | Mien | |
| Schin | Shin | Tau | | Sant | Sin | Hi | |
| Thau | Tau | Upsilon | | Tawi | Shin | Nue | |
| | | | | | Te | Sche | |

As the abovementioned languages were spoken by the most ancient people, it is not surprising to find that they retained so many marks of their origin, but it is worthy of observation that those languages which sprung out of them underwent greater changes in their external form, so as to give them an air of originality which does not in reality belong to them. Thus it is that the Greek, from the inventive genius of the people, acquired a peculiar structure and a richness of expression which made it pass for a primitive tongue, when in truth it is as much a derivative language as those which have since been formed. That it was indebted to the Egyptian for the names of its letters will be obvious to any one who should compare the Greek alphabet with the Coptic, given above; and antiquarians have made it clear that the roots of the Greek are to be traced either to the Egyptian, the Phœnician, or the Pelasgian, which was spoken by the Pelasgi, a Celtic people, who first took possession of Greece, or the Isles of Elisha as it is called in Scripture. It has also been clearly shown that this Pelasgian had a common original with the Irish and Welsh, the primitive languages of Ireland and Britain, which were peopled by two kindred tribes, the descendants of Magog and Gomer, the sons of Japhet, who at a very early period proceeded from Scythia to Europe, and laid the foundation of all the modern European languages. Those people which inhabited the countries of Europe, except Greece, were afterwards called by the Greeks

Keltæ or Gallatæ, and by the Romans Celti or Galli, Celts or Gauls.

The Latin was not formed until a colony of the Pelasgi or Greeks intruded themselves upon the Umbri or Gomeril, the aborigines of Italy, and so far prevailed over their language that they modelled the mixture of the two upon the plan of the Greek in the formation of cases, moods, and tenses, to which were afterwards added many words of Egyptian or Phœnician extraction, from the intercourse which took place between the Romans, Carthaginians, and Egyptians. As to the German, Danish, Swedish, and other northern languages, they all bear evident marks of their affinity not only to each other, but to that of the Latin, with which they had a common Celtic original. At the same time their ancestors before their second irruption into Europe under the name of Goths, Vandals, Huns, &c. had introduced such changes in the pronunciation and letters of their several languages as gave them an appearance of originality and peculiarity. Besides, it appears that the Hungarian, Sclavonic, Dalmatian, and Russian assumed a Greek character by a mixture of the Greek and its several dialects.

The French retains many vestiges of its Celtic original, but in consequence of the Roman conquest the additions of the Latin prevailed, to all which the people gave it a peculiarity both in its pronunciation, orthography, and structure. The same remark applies to the Spanish, which also underwent some additional changes from the incursions of the Moors, who ingrafted upon it many words of Arabian and Phœnician origin. The Italian is obviously a dialect of the Latin, modified by and assimilated to the French and Spanish, doubtless during the period when France, Spain, and Italy were governed by the emperors of the west.

The English, the last formed language in the world, is also remarkable for being compounded of a greater diversity of languages than any other. The groundwork of the English is the Saxon, but there is not a language in Europe which has not contributed more or less to its formation. Many words were retained or borrowed by the Saxons from the language of the original natives, namely, the Welsh, which, as before observed, was one of the ancient Celtic dialects, of the same origin as the Saxon itself, but existed long prior to it On the invasion and settlement of the Danes some changes as well as additions were made in the language, which underwent still greater changes at the Norman conquest, by the admission of Norman as well as French words, and the modelling of the language itself into a form more nearly allied to the French. From this source are derived a vast number of the Latin words and some few words of Greek origin, but the most numerous additions from these resources have since been made by the English themselves, who have also gradually given it a distinct form and pronunciation that entitle it as much to the name of original as any of the other European languages that are of more ancient date. To this diversity in the origin of the English, and its aptitude to naturalize every foreign term, it is indebted for a variety and richness of expression which is not equalled by any other language in the world.

The following list of the names of the ten first numbers among the European nations, taken from Parson's Remains of Japhet, will suffice to show the affinity of the languages abovementioned

| IRISH. | WELSH. | GREEK | LATIN | ITALIAN | SPANISH | FRENCH |
|---|---|---|---|---|---|---|
| 1. Aon | Un | Εἷς | Unus | Uno | Uno | Un |
| 2. Do | Duy | Δύω | Duo | Due | Dos | Deux |
| 3. Tri | Tri | Τρεῖς | Tres | Tre | Tres | Trois |
| 4. Ceathair. | Pedwar | Τέσσαρες | Quatuor | Quatro | Quatro | Quatre |
| 5. Cuig | Pymp | Πέντε | Quinque | Cinque | Cinco | Cinq |
| 6 She | Chuech | Ἕξ | Sex | Sei | Seys | Six |
| 7 Sheagd | Saith | Ἑπτὰ | Septem | Sette | Siete | Sept |
| 8. Ocht | Uith | Ὀκτὼ | Octo | Otto | Ocho | Huit |
| 9 Nyi | Naw | Ἐννέα | Novem | Nove | Nueve | Neuf |
| 10. Deic | Deg | Δέκα | Decem | Diecì | Diez | Dix |

| German. | Dutch. | Swedish. | Danish. | Saxon. | English. | Polish. | Russian | Hungarian |
|---|---|---|---|---|---|---|---|---|
| 1. Ein | Een | En | Een | Æne, an | One | Jeden | Yedna | Eg |
| 2. Zwei | Twee | Twa | Toe | Twa, twy | Two | Dwa | Twa | Kettö |
| 3. Drei | Drie | Tre | Tre | Drie | Three | Trizi | Tree | Harum |
| 4. Vier | Vier | Fyra | Fire | Feower | Four | Czterzti | Shatirx | Negy |
| 5. Fünf | Vyf | Fæm | Fem | Fife | Five | Dziex | Pet | Öt |

| German. | Dutch. | Swedish. | Danish. | Saxon. | English. | Polish. | Russian. | Hungarian. |
|---|---|---|---|---|---|---|---|---|
| 6. Sechs | Zes | Sex | Sex | Six | Six | Szesex | Chest | Hat |
| 7. Sieben | Zeven | Sju | Syv | Seofen | Seven | Sieden | Set | Het |
| 8. Acht | Acht | Aotta | Otte | Eaht | Eight | Osm | Wossim | Nioloz |
| 9. Neun | Negben | Nio | Nie | Negen | Nine | Dziewree | Devit | Kilenez |
| 10. Zehen | Tien | Tio | Tie | Tyn, tien | Ten | Dzesziec | Disset | Tiz |

LANNER. A sort of hawk, formerly much esteemed in falconry. It is next to the buzzard in size.

LANTERN FLY. A remarkable insect of South America, that emits an extraordinary light from the hollow of its head.

LANYARDS (among Mariners). Short pieces of rope fastened to several parts of a ship.

LAPIDARY (in Commerce). One who polishes and engraves stones.

LAPIS INFERNALIS. A sort of caustic composition.

LAPIS LAZULI (in Painting). A stone of an azure or blue colour, of which the paint called ultramarine is made. It is a copper ore, very compact and hard, and is found in lumps of a beautiful blue colour, richly variegated with clouds of white and veins of shining gold colour.

LAPSE (in Law). An omission on the part of the patron to present to a benefice within six months after it is vacant, upon which default the ordinary has a right to collate to the said benefice.

LAPSED LEGACY. Fallen or lost by a lapse, as where the legatee dies before the testator, &c.

LAPWING. See PEEWIT.

LARBOARD. A sea term for the left hand side of a ship, when looking towards the stem or head.

LARCENY. The felonious and fraudulent taking away the personal goods of another, which in England, is petty larceny if the thing be of the value of twelve pence or under, and grand larceny if above that value.

LARCH. A lofty tree of the pine kind, bearing leaves like those of the pine, and a sort of mushroom for the fruit. The gum of this tree is called Venice turpentine. The leaves fall off in winter. The timber, which is remarkably durable, is used in building ships.

LARDER. The room where meat is kept and salted.

LARES. The domestic or household gods among the Romans, placed in some private part of the house, which the family honoured as their protector.

LARGE (in Music). The greatest measure of musical quantities; one large containing two longs.

LARGE. A sea phrase for the wind, when it crosses the line of a ship's course in a favourable direction.

LARGESS (in Husbandry). A gift to the labourers in the harvest season.

LARGO (in Music). A slow movement.

LARK. A well known singing bird, the most remarkable species of which is the skylark, that sings so beautifully as it is soaring in the air. This bird is not found in America. Our meadow lark bears some resemblance to it, but is nearly twice as large.

LARKSPUR. A plant cultivated in gardens, the flower of which consists of many dissimilar petals or leaves, some of which end in a tail or spur.

LARVA. The grub or caterpillar state of some insects so called by Linnæus, but by others the eruca or caterpillar.

LARUM. A sort of clock that makes a noise or alarm at a certain hour.

LARYNX (in Anatomy). The top of the windpipe, below the root of the tongue

LASSO. A rope with a noose, used in South America for catching wild cattle

LAST. A measure or weight, as a last of corn, &c. equal to ten quarters, and a last of cod fish, &c. equal to from twelve to twenty-four barrels

LATH (in Carpentry). A long, thin piece of wood, nailed to the rafters of a wall or roof to receive the plaster or covering. Laths are distinguished according to the wood of which they are made, into hearts of oak, sap laths, and deal laths.

LATHE (in Turnery). The engine used in turning wood, &c.

LATIN. The language spoken by the ancient Romans, or the inhabitants of Latium, from which it derives its name.

LATITAT (in England). A writ used

in personal actions, where the party is to be arrested in any other county than Middlesex.

LATITUDE (in Geography). The distance of a place from the equator, which is either northern or southern, according as the place is north or south. The latitude cannot exceed 90 degrees, the distance of the equator from the north or south pole.

LATTEN. Iron plates tinned over, of which tea canisters are made.

LAVA. The mineral substance which flows from Mount Etna, Vesuvius, and other volcanoes, is of a grayish colour, light, moderately hard, and brittle, and easily frangible: it generally attracts the magnetic needle, and is easily fusible into compact glass.

LAUDANUM. A soporific tincture, containing the finer and purer parts of opium, drawn in water and spirits of wine, and then reduced to its due consistence.

LAVENDER. A plant with a shrubby stem, much branched with numerous hoary leaves. The flowers are produced in terminating spikes from the young shoots on long peduncles. The leaves, stalk, and flower yield a fragrant perfume, and from the latter are prepared an essential oil, a simple spirit, and a compound tincture

LAUNCE-FISH, or SAND LAUNCE. A sea fish which buries itself on the recess of the tide a foot deep in the sand. It is generally used for baits.

LAUNCH. A particular kind of boat, used in underrunning the cables of different ships, that are fastened across each other.

LAUNCHING. Putting a ship out of dock, and conveying her into the water.

LAUNDRESS. One whose business it is to wash and get up linen.

LAUREATE, or POET LAUREATE (in England). A title given to the king's poet.

LAUREL. An evergreen tree, having broad, thick, shining leaves. The flower consists of five petals or leaves, which expand in the form of a rose.

LAURISTINUS. The wild bay tree.

LAW. In its most extensive sense, the rule of conduct prescribed by the supreme power of a state. The laws of England comprehend the Common Law and the Statute Law, together with certain portions of the Civil Law and the Canon Law.

LAWN. A plain or level space covered with grass, in a pleasure ground.

LAY (in Ecclesiastical Law). An epithet for whatever belongs to the people at large, in distinction from those who are in holy orders

LAY (with Poets). A kind of ancien poetry, consisting of short verses.

LAY (in Husbandry). Ground that lies fallow or untilled.

LAY BROTHERS. In the Romish church, such as performed the secular and servile offices in a convent.

LAY CORPORATION (in England). A lay investiture of bishops, &c.

LAYER (in Horticulture). A young sprout beat down and covered with mould for raising fresh plants

LAYER (among Fishermen) A channel or bed in a creek, where small oysters are thrown for breeding.

LAY FEE (in England). Lands held in fee of a lay lord, as distinguished from those lands which belong to the church.

LAY IMPROPRIATION (in England). The impropriating or employing the revenues of the church to the use of a layman.

LAYMAN (in Ecclesiastical Law). One who has not taken holy orders.

LAYMAN (in Painting). A statue of wood, whose joints are so made that it may be put into any posture.

LAZARETTO. An hospital for lazars or leprous persons.

LAZULI. See LAPIS.

LAZULITE. A mineral of the silicious order, of which lapis lazuli is the principal species. Its principal constituents are silica, alumines, carbonate of lime, sulphate of lime, oxide of iron, &c.

LEACH (among Miners). A term signifying hard work.

LEAD (in Mineralogy). A bluish white metal, very soft and flexible, and easily beaten into thin plates by the hammer In a strong heat it boils and emits flames, and if during that time it is exposed to the air, its oxidation proceeds very rapidly. It is very brittle at the time of congelation. Most of the acids attack lead, but it unites with most of the metals, particularly tin, which in union with lead forms the solder used by plumbers. The carbonate of lead, which is a powder, is better known by the name of white lead; the red oxide of lead is otherwise called red lead.

LEAD, or SOUNDING LEAD. A sea term for an instrument which is used to discover the depth of water at sea.

LEAF (in Botany). A membranaceous and sometimes succulent part of a plant, which arises from the stem. Leaves appear to assist the process of vegetation by communicating the air to the whole of the plant, which on that account is found to be exceedingly tender of its leaves, and to suffer much from any rough treatment which they may receive.

LEAF. A term applied to other objects resembling a leaf in shape or make, as the leaf of a book; also leaf gold or silver, gold or silver beaten into plates of exceeding thinness.

LEAGUE (in Geography). A measure of length, containing a certain number of geographical paces, according to the usage or computation of different countries. A league at sea, where it is mostly used by us, is equal to three miles, or three thousand geometrical paces: the league in France contains three thousand five hundred paces. The Dutch or German league four geographical miles. Seventeen Spanish leagues are equal to a degree, or sixty-nine and a half statute miles.

LEACUE (in Politics). A treaty of alliance between different states or parties

LEAK. Any hole or chink in a vessel which admits the water, particularly applied to a ship at sea.

LEAKAGE (in Commerce). An allowance made to merchants for the leaking or running of vessels.

LEAP (in Commerce). A measure equal to half a bushel.

LEAP YEAR (in Chronology) Any year in which a day is added more than ordinary.

LEASE (in Law). A conveyance of lands, generally in consideration of rent or other annual recompense, for term of years, for life, or at will, provided it be for a shorter term than the lessor has in the premises.

LEASH (among Sportsmen). The number of three applied to partridges or other game which are killed.

LEASING. The same as gleaning, or picking up the ears of corn after the field is cleared.

LEATHER. The skin or hide of a beast tanned and dressed.

LEATHER-DRESSER. One who dresses leather.

LEATHER-SELLER. One who deals in leather. The company of leather-sellers in London, was incorporated in 1382.

LEAVEN. A piece of sour dough put to ferment a mass of bread.

LECTURER (in Ecclesiastical Law). In England, a minister who preaches in the afternoon, and is usually paid by the people.

LEDGE (in Geography). A long ridge of rocks near the surface of the sea.

LEDGER. The chief book used in mercaants accounts, wherein every man's particular account is kept; and also all the goods bought and sold are distinctly placed eacn by themselves, as debtor on the left hand page, and creditor on the right hand.

LEE. A sea term for that part which the wind blows upon, or that is opposite to the wind, as the lee shore.

LEECH. A well known insect that lives in the water, and is commonly used in bleeding. The two principal species are the medicinal leech, which is employed to draw blood where the lancet is less safe; and the horse leech, which is larger, and applied to horses for the same purpose.

LEECHES. A sea term for the edges of a sail.

LEEK. A potherb having long cylindrical and coated roots. It has something of the flavour of the onion.

LEES. The dregs of wine.

LEET. In England, a little court within a manor, having a criminal jurisdiction.

LEG (in Anatomy). A limb, and that part of the animal body which serves for walking.

LEG (among Artificers) Whatever serves for the support of a thing, as the leg of a stool, &c.

LEG (in Mathematics). The two sides of a triangle are called the legs.

LEG. A sea term for ropes put through the bolt ropes of the main and foresail.

LEGACY (in Law). A bequest or gift by testament of any personal effects; the person bequeathing is called the testator, and he to whom it is bequeathed the legatee.

LEGATE. A cardinal or bishop sent by the pope as his ambassador to sovereign princes.

LEGEND. A book used in the ancient Roman churches, containing the lessons that were to be read; also a chronicle or register of the lives of saints.

LEGEND (among Antiquarians). The inscription on the edge of a medal or coin.

LEGERDEMAIN, or SLIGHT OF HAND Tricks which, from the dexterity of the performer, are made to deceive the observer.

LEGION (in the Roman army) A body of 6000 foot and 300 horse, or less

LEGUMEN. All manner of pulse.

LEGUMEN (in Botany). That species of seed vessel vulgarly termed a pod, as the seed vessel of the pea, vetch lupine, &c

LEMMA. A proposition in Mathematics, which serves to prepare the way for the demonstration of some theorem.

LEMMING. A species of animals of the rat kind; the Lapland lemming migrates

at the approach of winter, and rather than deviate from his straight course he will perish in attempting to surmount obstacles that lie in his way.

LEMONADE. A drink made of water, lemons, and sugar

LEMON. An acid fruit of the lemon tree, belonging to the genus citrus. It grows in Florida and Louisiana, and also in the south of Europe.

LEMUR. A genus of quadrupeds somewhat resembling the monkey in the form of the feet, but widely different from that animal in its manners and temper. Two of these animals brought from India lately, and exhibited in Boston, would walk backward and forward on a small tight cord, using their tails for balance poles.

LENS. A piece of glass or other transparent substance of the figure of a lentil, which either collects the rays of light into a point, in their passage through it, or disperses them according to their form and the laws of refraction. The convex lens converges the rays of light, and the concave disperses the rays. If only one side is convex and the other plane, it is called a plano-convex lens, such as A in the following figure; if convex on both sides, it is a double convex lens, as B. The concave lenses are also divided into the plano-concave, as C, concavo concave, as D. and the meniscus, which is concave on one side and convex on the other, as E.

LENT. A time of fasting and abstinence for forty days before Easter.

LENTILS. A sort of pulse.

LEO (in Astronomy). A constellation and one of the twelve signs of the zodiac marked thus ♌.

LEOPARD. An African animal of the cat kind covered with black spots upon a yellow ground, so disposed, as to resemble the print of its foot. It is one of the most beautiful of all quadrupeds.

LEPIDOPTERA. An order of insects in the Linnæan system, which have their wings imbricated with scales, as the butterfly, moth, &c.

LEPROSY (in Medicine). A foul cutaneous disease, appearing in dry, white, thin, scurfy scabs.

LEPUS (in Astronomy). The Hare, a constellation in the southern hemisphere.

LE ROY LE VEUT, i. e. The king wills it. In England the form of words by which the king signifies his assent to the bills that have passed the two houses, after which they acquire the force of laws.

LE ROY S'AVISERA, i. e. The king will consider of it. The form of words by which he refuses his assent to any bills that are presented to him.

LETHARGY. A disease arising from cold, phlegmatic humours which oppress the brain, and cause an incessant drowsiness.

LETHE. A river in hell, which, according to the poets, caused all who drank of it to forget the past.

LETTER (in Grammar). A character in the alphabet, used to express the simple sounds of the voice which in every language are collected into a series called the

alphabet. Letters are composed of vowels and consonants, and form words.

LETTER (in Printing). The type or character which is used in composing.

LETTER (in Commerce). Any writing sent from one person to another.

LETTER OF ADVICE. A letter written by a merchant to his correspondent, advising or giving him notice of what bills he has drawn upon him.

LETTER OF ATTORNEY (in Law). A writing whereby a person constitutes another to do a lawful act in his stead, as to receive debts, &c

LETTER OF CREDIT (among Merchants). A writing by one merchant to another, desiring him to credit the bearer with a certain sum of money.

LETTER OF MARQUE. A commission given to private ships, by a government, to make reprisals on the ships of another state.

LEUCHTENBERGITE. A mineral of a yellow color and pearly lustre. Its constituents are silica, alumina, magnesia, peroxide of iron, lime, and water.

LEUCITE. A stone of the garnet kind.

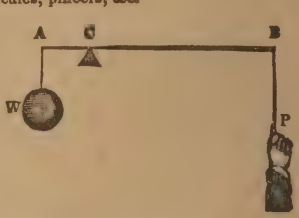
LEVEL. An instrument used to make a line parallel to the horizon. The plumb level is that which shows the horizontal line by means of another line perpendicular to that described by a plummet or pendulum, which instrument consists of two legs or branches, joined together at right angles, whereof that which carries the thread and plummet is about a foot and a half long, the thread is hung towards the top of the branch. A telescope is placed on the horizontal branch of the instrument, having a hair placed horizontally across the focus of the object glass, which determines the point of the level. The telescope is fastened by a ball and socket.

LEVEE. In England, a company of the nobility, gentry, &c. who assemble to pay their respects to the king. It consists of gentlemen only, by which it is distinguished from a drawingroom, where ladies as well as gentlemen attend. The term is also applied to the evening assemblies at the president's house in Washington.

LEVELLING. The art of finding a line parallel to the horizon at one or more stations, in order to determine the height of one place in respect to another. The subjoined figure shows the manner of finding the difference of the level of a place where there is a level line and two sights level with each other, whereby the perpendicular distance between the surface of the ground and any point in the level line may be discovered. The art of levelling is particularly applied to the laying out grounds even, regulating descents, draining morasses, conducting water, &c.

LEVELLING (in Fortification). The reducing an uneven surface to that of a plane, so that the works may be of a corresponding height and figure.

LEVER. One of the six powers, which may consist of any instrument, as a straight bar of iron or wood, as A B, supported upon a fulcrum or prop, C, having weight, W, at one end, a power, P, at the other. Then A C and B C are the arms of the lever. Of this kind are balances, scales, pincers, &c.




LEVERET. A young hare.

LEVIGATION. The mechanical process of grinding the parts of bodies to a fine paste, by rubbing the flat face of a stone called a muller, upon another stone called the table or slab.

LEVITE. One of the tribe of Levi, or belonging to the priestly office.

LEXICOGRAPHY. The art of writing dictionaries.

LEYDEN PHIAL, or LEYDEN JAR

So called from M. Vankleigh, of Leyden, who first observed its properties. A glass jar, having the outside and the inside coated with tin foil, and a brass wire, the upper part of which terminates in a ball of the same metal, and the lower part in a chain that communicates with the inside. This jar admits of being charged so as to produce the electrical shock and various other experiments illustrative of the power of electricity.

LIBATION. A sacrifice among the Greeks and Romans, which consisted in offering up some liquid to the gods.

LIBEL (in Law). An injurious reproach or accusation written or published against the government, a magistrate, or a private person.

LIBEL (in the Civil Law). The declaration or charge drawn up in writing, as is used in the ecclesiastical courts.

LIBERAL ARTS. Such as are fit for gentlemen and scholars.

LIBERTY (in Law). A privilege by which men enjoy some favour or benefit, beyond the ordinary subject.

LIBERTY OF CONSCIENCE. The liberty of following any profession of religion, which one pleases, without any control from government.

LIBERTY (in the Manege) A void space in the middle of a bitt of a bridle, to give place to the tongue of a horse.

LIBRA (in Astronomy). A constellation, and one of the twelve signs of the zodiac, marked thus (♎).

LIBRARIAN. One who has charge of a library

LIBRARY. A large collection of books, also the place which contains them. The first library spoken of in history was that formed by Pisistratus, tyrant of Athens. Eumenes, king of Pergamus, also formed a library of 200,000 volumes; but the library of Alexandria, formed by Ptolemy Philadelphus, contained 700,000. Among the libraries of the moderns, that of the Biblistheque Imperial, of Paris, is the most celebrated. It was begun in the middle of the 14th Century with ten volumes, but has been augmented, till it now contains 1,200,000 printed volumes and 84,000 manuscript volumes.

LIBRATION. In astronomy, an apparent irregularity of the moon's motion, by which she appears to librate about her axis.

LIBRETTO. A little book containing the words of an opera.

LICHEN. In botany, an order of plants of very low organization, which grow on the bark of trees, on rocks, and on the ground. In pathology, an eruption of the skin; a cutaneous distemper.

LICTOR. A Roman officer, who bore an axe and fasces or rods, as ensigns of his office.

LIEBERKUHN. A metallic mirror attached to the object-glass end of a microscope for the purpose of throwing down light on opaque objects; a reflector

LIEUTENANT. In the army or navy, one who supplies the place and discharges the duty of his immediate superior in his absence.

LIEUTENANT GENERAL. In the United States, an officer next in rank below the Governor of a State and during the absence of the Governor performs his duties.

LIEN. A legal claim; the right by which the possessor of property holds it against the owner in satisfaction of a demand.

LIEVRITE. A brownish-black mineral, occurring in long, vertically striated, prismatic crystals.

LIGAN. In law, goods sunk in the sea, but tied to a cork or buoy, in order to be found again.

LIGAMENT. In anatomy, a strong elastic membrane or substance connecting the extremities of the movable bones. In conchology, an external substance, generally of a compact fibrous texture, by which the two valves or bivalvular shells are united.

LIGNINE. The proximate chemical principle of wood; the fibre of wood, forming about 95 per cent. of barked wood, and the chief ingredient of cotton, linen, and paper.

LIGNITE. Fossil wood carbonized, and converted into a kind of coal.

LIGNUM VITÆ. A very hard and close-grained wood, of the plant Guaiacum officinale, remarkable for the direction of its fibres, each layer of which crosses the preceding diagonally. A native of S. America and the W. Indies.

LIGULA. In botany, a membranous appendage at the apex of the sheathing petiole of grasses. In Entomology, the lower lip of insects; also, the name of a genus of Entozoa, forming the family Cestoidea. Ligulated flowers, in botany, are such as have a monopetalous slit on one side, and open flat, as in the Dandelion.

LIGATURE (in Surgery). The disposing of bandages for closing wounds

LIGATURE (among Printers). Type consisting of two letters in one piece, as ff, &c.

LIGHT (in Optics) The sensation which arises from beholding any object, or the cause of that sensation. The nature and properties of light, and the changes which it undergoes in passing through bodies, form a principal part of the science of optics.

LIGHT (in Painting). That part of a piece which is illumined.

LIGHT (in Architecture). Lights are the apertures in a house

LIGHT (in Military Affairs). An epithet for soldiers lightly armed, as lighthorse, or lightinfantry.

LIGHTER. A large vessel for carrying goods.

LIGHTERAGE. Money paid for the carrying goods in a lighter.

LIGHTERMAN. One who conducts a lighter.

LIGHTHOUSE. A tower or lofty building on the seacoast, having a light in it, for the guidance of mariners at night.

LIGHTNING. In physics, the flash that precedes thunder; an electric phenomenon produced by the passage of electricity between one cloud and another, or between a cloud and the earth.

LILASINE. A chemical principle discovered in lilac.

LILIACEÆ. A natural order of Endogens, containing many of the most beautiful floral plants of that class of the vegetable kingdom, of which the Lilium, or Lily, is the type.

LILY ENCRINITE. In geology, the fossil zoophyte, one of the most beautiful of the Crinoidean family, found in the Muschelkalk; so termed from the resemblance it bears to the head of a lily when the arms are folded.

LIMACIANS. A name comprehending the genera of Slugs.

LIMB. In astronomy, a term applied to the edge of a planet.

LIMBERS. In the artillery service, two-wheel carriages having boxes for ammunition.

LIMBAT. A name in the island of Cyprus applied to a cooling wind, blowing from 8 A. M. till mid-day or later; the local sea-breeze.

LIMBO, or LIMBUS. A region bordering on hell; purgatory. Ariosto makes it the place of all lost things; Milton the paradise of fools; and Shakspeare, hell itself.

LIME (in Mineralogy). An earthy substance, which is found purest in limestone, marble, and chalk, and is procured by burning in a white heat It is of a white colour, and easily reduced to a powder If water be poured on newly burnt lime it swells and falls to a powder, in which state it is called slacked lime.

LIME (in Botany). A tree of the orange kind, that grows in warm climates.

LIME KILNS. Furnaces in which lime stone is converted into lime by burning.

LIMESTONE. The native carbonate of lime, which is generally rather blue, from the presence of iron

LIMIT (in Mathematics). A determinate quantity, to which a variable one continually approaches

LIMITATION (in Law). A certain time prescribed by statute, within which an action must be brought

LIMNING The art of painting in water colours.

LINCHPIN, or LINSPIN. An iron pin that keeps the wheel on the axle-tree.

LINE (in Geometry). A quantity extended in length only Lines are either curves or right lines.

LINE (in Fortification). Whatever is drawn on the ground of the field, as a trench, or a row of gabions, &c.

LINE (in Military Affairs). Regular troops, in distinction from the militia, volunteers, &c.

LINE, or a SHIP OF THE LINE (in Naval Affairs). Is any vessel of war large enough to be drawn up in the line of battle.

LINE (in Geography). Another name for the equator, or equinoctial line.

LINE OF BATTLE. The disposition of an army for battle.

LINEN. A kind of cloth made of flax

LING. A sort of cod fish.

LINNÆAN SYSTEM. A system of natural history, so called from Linnæus, the Swedish naturalist. It comprehends a scientific arrangement of all natural objects, as animals, plants, and minerals into three kingdoms, subdivided into classes, orders, genera, species, and varieties, with

a description of their generic and specific characters.

LINNET. A small singing bird, of the finch kind. The bird in America called indigo bird is a variety of the linnet.

LINSEED. The seed of hemp or flax, from which an oil is extracted.

LINT. Linen scraped into a soft, woolly substance, fit for applying to wounds.

LINTEL. The upper part of a door or window frame.

LION. The fiercest and noblest of all wild beasts, which is made to be the emblem of strength and valour, and is on that account the most frequently borne in coats of arms. It is a native of Africa and India, and being nearly allied to the cat tribe, is classed by Linnæus under the same genus

LIQUIDS (in Chemistry). Fluids which are not elastic, nor diminish sensibly in bulk, in distinction from gases or elastic fluids.

LIQUIDS (in Grammar). The letters l, m, n, r, so called from their soft and melting sound.

LIQUOR. Any thing liquid that may be drank, particularly what is of a spirituous nature

LIQUORICE. A shrub, the root of which is full of a sickly sweet juice.

LIST. A roll or catalogue of names.

LIST, Civil (in England). The whole of the king's revenue.

LIST (among Mariners). An inclination to one side, applied to a ship.

LIST (among Clothiers). A border or edge of cloth.

LIST, or LISTELL (in Architecture). A small band or square moulding, serving to crown larger mouldings.

LISTS. A place enclosed with rails, within which tournaments or feats of arms were exhibited.

LITANY. A general supplication or prayer sung or said in churches, especially that in the Book of Common Prayer.

LITERARY PROPERTY. The right which authors have in their works.

LITHARGE. The scum or dross that arises in purifying silver with lead. It is an oxide of lead.

LITHIC ACID An acid extracted from the urinary calculi.

LITHOGRAPHIC. An epithet for what pertains to engraving on stone, as lithographic impressions, those which are taken on paper from engravings on stone.

LITHOGRAPHY. The art of cutting or engraving on stone, from which impressions are taken on paper.

LITHOMARGE. An earth of the clay kind, which is known by the name of fuller's earth and potter's clay

LITHOTOMY (in Surgery). The operation of removing a calculus or stone from the bladder.

LITMUS (in Chemistry). A substance from which is formed a tincture that serves as a test of the presence of an acid or an alkali. All acids and salts change the natural violet of the litmus into red, and all alkalies restore it to its natural colour the violet.

LITURGY. A set form of prayer, or a formulary of public devotion.

LITTORAL. In geology, applied to operations and deposits which take place near the shore, in contradistinction to those of a deep-water character; in botany, growing on the sea-shore or on the banks of a river; Littoral Zone, that zone of marine life which lies between high and low water mark, varying in extent according to the rise and fall of the tide, and shallowness of the shore.

LITURGY. The established formulas for public worship.

LIVER. In anatomy, a large abdominal organ, of a deep red color, lying under the false ribs on the right side; its principal use is to secrete the bile.

LIVERYMEN (of London). A certain number of persons chosen from among the freemen of each company in the city. Out of this body are chosen the common council, sheriff, and other superior officers of the city, and they alone have the privilege of voting at the election of members of parliament.

LIVERY STABLES. Public stables where horses are let out to hire.

LIVRE. A money of account formerly used in France, equal to twenty sous, or twenty cents

LIXIVIUM. A lye made of ashes.

LIZARD. An extensive tribe of animals, classed by Linnæus under the genus lacesta, comprehending the crocodile, basilisk, chameleon, and salamander. The lizard, properly so called, is a little reptile of a green colour, and is frequently to be met with in gardens or under dunghills, &c.

LLAMA (in Natural History). An animal of the camel kind in Peru and Chili, which has a bunch on the breast, long, soft hair, and defends itself by ejecting its saliva

LLANDELLO FORMATION. In geology, the lowest series of the silurian system.

LLANOS. A term applied to extensive treeless plains which extend along the banks of the river Orinoco, in S. America.

LLOYD'S. A part of the Royal Exchange in London, appropriated to the use of underwriters and insurance brokers; so called from Lloyd's coffee-house having been the original place of meeting.

LOADSTONE. A sort of ore dug out of iron mines, on which the needle of the mariner's compass is touched, to give it a direction north or south. It is a peculiarly rich ore of iron, found in large masses in England, and most other places where there are mines of that metal. It is of a deep iron gray, and when fresh broken, it is often tinged with a brownish or reddish colour.

LOAF. A lump of bread of a certain weight, worked by the baker into a particular shape

LOASACEÆ. In botany, the Chilinettle family, an order of plants, alliance Cactales. The Loasaceæ are all natives of North and South America.

LOAF (among Sugar-bakers). A lump of sugar of a conical form.

LOAM, or LOME. A particular kind of fat, unctuous, and tenacious earth, that is used much by gardeners in making compost.

LOAN. In general, any thing intrusted to another to be returned again; particularly money.

LOAN (in Political Economy). Sums of money borrowed from individuals or public bodies for the service of the state. This practice of borrowing money to defray the extraordinary expenses in time of war which has been adopted in Great Britain during several of her late wars, has given rise to the national debt. All loans on the part of government in England, are contracted for by the Chancellor of the Exchequer, and afterwards confirmed by parliament. Loans used formerly to be granted by public bodies to the king in consideration of certain privileges that were secured to them, but now money is commonly advanced by individuals, in consideration of receiving interest.

LOBBY (in Architecture). A kind of passage, room, or gallery, as the lobby in a theatre

LOBBY (in Naval Architecture). A small room near the bread-room in a vessel of war, appropriated to the use of the surgeon.

LOBE (in Anatomy) A division in any body, as the lungs or liver

LOBE (in Botany) A division in seeds, such as beans, peas, &c.

LOBSTER. A small crustaceous fish, having a cylindrical body, with a long tail and long antennæ. Lobsters are found on most of the rocky coasts of England, and are abundant in this country

LOCAL (in Law). Tied or joined to a place; thus real actions are local, because they must be brought in the country where the lands, &c. lie.

LOCAL COLOURS (in Painting). Such as are natural and proper for each particular object in a picture

LOCAL PROBLEM (in Mathematics). That which admits of innumerable solutions

LOCK (among Smiths) A piece of iron work, which is looked upon as a masterpiece in smithery, as much art and nicety is required in contriving and varying the springs, bolts, and different parts to the uses for which they are intended. Locks intended for outer doors are called stock-locks, those on chamber doors spring-locks, besides which there are padlocks, trunk-locks, &c. The principle on which all locks depend is the application of a lever, that is the key, to an interior bolt, by means of a communication from without; and the security of locks depends upon the impediments which may be interposed between this lever and the bolt. These impediments have commonly been produced by means of the wards of the key so artfully contrived as to preclude the access of all other instruments besides the key to the bolt. As these contrivances have not, however, been always an effectual bar, Mr. Bramah has constructed a lock on such a principle that the office which in other locks is performed by the extreme point of the key is here assigned to a lever, which cannot approach the bolt until every part of the lock has undergone a change of position.

LOCK, or WEIR (in Inland Navigation) A name for all works of wood or stone which are made to confine or raise the water of a river or canal. In artificial navigations the lock consists of two gates, the upper one called the sluice gate, and the under one the flood gate.

LOCK (among Gunsmiths). That part of a musket by which fire is produced for the discharge of the piece.

LOCKED JAW. A spasmodic affection which prevents the motion of the jaws.

LOCKER (among Mariners). A box or chest in which things are stowed.

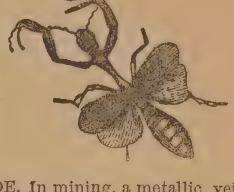
LOCHABER-AXE. A formidable weapon of war, formerly used by the Highlanders of Scotland, consisting of a short pole with a sharp axe at one end.

LOCHIA. In medicine, the discharge that flows from the uterus and vagina after child birth while the mucous membrane is returning to its former condition.

LOCULAMENT. In botany, the cell in the pericarp of a plant, in which the seed is lodged.

LOCUS. In geometery, a line or surface over which a point may travel so as always to be in a position which satisfies some given condition; the line generated by a point, moving according to a fixed law.

LOCUST. A voracious insect, like the grasshopper, which in some parts, particularly in Africa and Asia Minor, fall like a cloud upon the country, and lay waste all before them. They are no less terrible dead than alive, for their putrified carcasses cause a pestilence where they happen to alight



LODE. In mining, a metallic vein, or any regular vein or course; a cut or reach of water.

LODGMENT. The act of lodging, or the state of being lodged; accumulation or collection of something deposited or remaining at rest. In military affairs, an encampment made by an army; a work cast up by besiegers during their approaches, in some dangerous post.

LOGAN. In geology, a large rock so balanced as to be easily moved; a large rocking stone.

LOGANIACEÆ. In botany, a natural order of dichlamydeous Exogens, of which Logania is the type.

LOG (among Mariners). A flat piece of wood, with lead at one end and a line at the other, for measuring the rate of a ship's sailing.

LOGARITHMS. Numbers so contrived and adapted to other numbers, that the sums and differences of the former shall correspond to and show the products and quotients of the latter, or more properly a series of numbers in arithmetical progression answering to another series in geometrical progression, thus,

0, 1, 2, 3, 4, 5, &c. Indices or Logarithms
1, 2, 4, 8, 16, 32, &c. Geomet. Progression
Or,
0, 1, 2, 3, 4, 5, &c. Indices or Logs.
1, 3, 9, 27, 81, 243, &c. Geomet. Prog.
Or,
0, 1, 2, 3, 4, &c. Indices or Log
1, 10, 100, 1000, 10,000, &c. Geom. Prog.

Where it is evident that the same numbers in arithmetical progression, which are the logarithms or indices, serve equally for any geometrical series, consequently there may be an endless variety of systems of logarithms to the same common numbers, by only changing the second term, 2, 3, 10, &c. of the geometrical series. If any two indices be added together their sum will be equal to the product of the two terms in

geometrical progression with which those indices correspond, thus, 2 and 3 added together are equal to 5, and the numbers 4 and 8 corresponding with those indices being multiplied together are equal to 32, which is the number answering to the index 5. So if any index be substracted from another, the difference will be the index of that number, which is equal to the quotient of the two terms to which those indices belong, thus the index 6—4=2, then 64 divided by 16, the terms corresponding to these two indices leaves the quotient 4, which answers to the index 2. Logarithms being the expodents of ratios are on that account called indices, thus the logarithm 2 is the exponent or index of the several numbers in the geometrical series over which it stands, as $2^2$, or the square of 2 equal to 4 in the first series, $3^2$ or square of 3, that is 9 in the second series, and 102 or the square of 10, that is $10^2$ in the third series; so likewise 3 is the index or exponent for the cube numbers 8, 27, 1000, &c. over which it stands.

LOG-BOARD. A table or board containing an account of a ship's way measured by the log.—Log-book is a register into which are transcribed the contents of the log-board, &c.—Log-glass is a half-minute sand-glass used for timing the speed of sailing.—Log-line, a line of about 150 fathoms, fastened to the log.

LOGOMETER. A scale for measuring chemical equivalents.

LOKE. In the Scandinavian mythology, the name of an evil deity, described in the Edda as a great serpent encircling the earth.

LOGOTYPE. In typography, two or more letters cast in one piece, as fi, ff, &c.

LOHOCH. A medicine of a consistence between a soft electuary and a syrup.

LONGI. In compound words, a prefix signifying length.

LONGICORNS. A family of tetrametrous Coleoptera, remarkable for the length of their antennæ.

LONGIMETRY. In surveying, the art of measuring distances.

LONGIPALPI. A family of short-winged Beetles, in which the maxillary palpi are nearly as long as the head.

LONGIPENNES. A term applied to a family of oceanic birds remarkable for their long wings, as the Albatross, Petrel, &c.

LONGIROSTERS. A family of Wading birds, distinguished, as in the Snipes, for the extreme length of the bill.

LONGISSIMUS DORSI. A muscle of the back which assists in keeping the spinal column erect.

LONGITUDE. In geography, the circumference of the earth, measured east and west, the distance of any part of the earth, to the east or west, from a meridian, or from any place, estimated in degrees.—In astronomy, the distance of a heavenly body from the first degree of Aries, reckoned on the ecleptic.—Heliocentric longitude is the longitude of a planet as seen from the sun.—Geocentric longitude is the longitude of a planet seen from the earth; that is, the point of the ecliptic to which it perpendicularly corresponds, as seen from the centre of the earth.

LONG PRIMER. In typography, a sort of type intermediate between small pica and bourgeois.

LONGUS COLLI. A pair of muscles in the neck. When one contracts it moves the neck to one side, and when they both act the neck is bent forward.

LOOPERS. The larvæ of certain species of moths, which form a loop when crawling.

LOCUST. A voracious insect, like the grasshopper, which in some parts, particularly in Africa and Asia Minor, fall like a cloud upon the country, and lay waste all before them. They are no less terrible dead than alive, for their putrified carcasses cause a pestilence where they happen to alight.

LOPHIODON. A Mammalian animal, known only by fossil remains; somewhat resembles the rhinoceros.

LOPHIOMYS. A small animal belonging to Rodentia, found in Africa.

LOPHIUS. A fish belonging to Acanthopteri.

LOPHOBRANCHIATE. A term applied to an order of fishes with gills arranged in tufts.

LORANTHACEÆ. A nat. order of parasitical exogenous shrubs.

LORIANÆ. A sub-family of the Psittacidæ, or Parrots, the Lories, of which the Lorius is the type.

LORICARINÆ. A sub-family of the Silures, or Cat-fish, whose bodies are mailed with large osseous plates.

LUCERN. A valuable species of Trefoil belonging to the genus Medicago, which is excellent food for cattle.

LUCIMETER. An apparatus for measuring the intensity of light; a photometer.

LUCULLITE. A variety of black limestone, often polished for ornamental purposes.

LORIS. The lazy Monkey; a lemur-like animal, found in Hindostan. Slow Loris the Bengal Sloth. Also a New Zealand bird.

LOOPHOLES (in Fortification). Little holes made in the walls of a castle or fortifica-

tion, through which arrows were discharged.

LORD In England, any peer of the realm; also a title of honour sometimes given to persons by virtue of their office, as the Lord Chancellor, the Lord Chief Justice, the Lord Mayor.

LORD OF A MANOR (in England). A person that had a fee, and consequently the homage of the tenants within his manor, and also the privilege of holding a court baron. Lords of the manor still retain some of the old manorial rights.

LORY. A bird of the parrot kind.

LOTE TREE. A kind of tree which from its jagged leaves was called the nettle tree.

LOTION The washing or cleansing of any medicine with water; also a wash for the skin

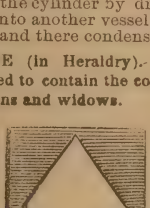
LORCHA, A light coasting vessel used in China, and the Eastern seas, having the hull built on a European model, but rigged like a Chinese junk.

LOTE-TREE. The African shrub Zizyphus lotus, the lotus of the Lotophagi, or Lotus-eaters. The fruit is used as food for cattle, and converted into bread by the natives.

LOTUS. A genus of leguminous plants, the name of which was applied to an Egyptian plant (the Water-lily of the Nile), and to the several species of the genus lotus.

LOW PRESSURE. A term applied to a steam-engine, the motive force of which is produced by forming a vacuum within the cylinder by drawing off the steam into another vessel called the condenser, and there condensing it.

LOZENGE (in Heraldry). A figure which is used to contain the coats of arms of all maidens and widows.



LOZENGE (in Geometry). A quadrilateral figure, having two angles acute and the two opposite ones obtuse.

LOZENGE (in Pharmacy). A medicine made to be held in the mouth, which was originally in the form of a lozenge.

L. S. An abbreviation for locus sigilli, the place of the seal.

LOUIS, St., Order of. An order of knighthood instituted 1693, by Louis XIV

LOXA BARK. In botany, a pale Peruvian bark, the product of Cinchona condaminea.

LOXODROMICS. The art of oblique sailing by the rhomb, which always makes an equal angle with every meridian.

LUGGER. A small vessel carrying either two or three masts, with a running bowsprit, upon which lugsails are set, and sometimes topsails adapted to them

LUMBAGO. A rheumatic affection of the muscles about the loins.

LUNACY. A kind of madness, so called because supposed to be influenced by the moon.

LUNAR. Belonging to the moon, as a lunar eclipse, month, year, &c.

LUNATICS. Are properly such as have diseased imaginations, which deprive them of the use of their reasoning faculty, sometimes altogether and sometimes only on particular subjects.

LUNATION, otherwise called the Synodical Month. A revolution of the moon, or the time between one new moon and another.

LUNE (in Mathematics). A geometrical figure in form of a crescent.

LUNGS (in Anatomy). A viscus in the animal body, composed of two lobes or divisions, which are spongy bodies, situated in the chest, and serving the purpose of respiration.

LUPINE. A sort of pulse, which bears a papilionaceous flower. There are several species of lupines cultivated in gardens, as the white lupine, the small blue lupine and the great blue lupine, &c. which are all annuals except one species, called by distinction the perennial lupine.

LUPUS. The Wolf in Astronomy, a constellation in the southern hemisphere

LURIDÆ (in Botany). A natural order of plants in the Linnean system, which are poisonous, as the nightshade, digitalis &c.

LUSTRATION. The ceremony of purification performed by the ancient Roman

every five years; whence that space was called a lustrum.

LUSTRE (in Mineralogy). One character of mineral bodies, which in that respect are distinguished into splendent, shining, glistening, glimmering, and dull.

LUTE. A stringed instrument, containing at first only five rows of strings, to which were afterwards added six more. It was formerly much used.

LUTE (in Chemistry). A compound paste made of potter's clay, sand, and other materials, for the purpose of closing up the necks of retorts, receivers, &c. in different chemical experiments.

LUTHERANISM. The doctrines of Martin Luther, the German reformer, which form the creed of all the protestants in Germany who are not Calvinists.

LYCOPODIUM, or CLUB MOSS. A sort of moss, the seeds of which when ignited burn off like a flash of lightning. It is used in the London theatres.

LYDIAN STONE A stone of a grayish black colour, which is found in Bohemia and other parts of Germany, and also in Scotland. When polished, it is used as a test stone for determining the purity of gold and silver. It was used for that purpose among the ancients, by whom it received this name, because it was found only in the Tmolus, a river of Lydia

LYE. A composition of ashes and water for washing or scouring.

LYMPH (in Anatomy). A clear lymphid humour, secreted from the blood, which is carried by the lymphatic vessels into the thoracic duct, where it mixes with the chyle.

LYMPHATICS. The lymphatic vessels.

LYNX. A wild beast, of a tawny brown colour, with black spots, and very quick sighted, which in its habits resembles the wild cat.

LYRA. The lyre, a constellation in the northern hemisphere.

LYRE. A musical stringed instrument, much used by the ancients.

LYRIC. Pertaining to the harp, as lyric verse, poetry made for or set to the harp

## M.

M, the thirteenth letter of the alphabet, which as a numeral stands for mille, a thousand, and with a stroke over it, thus $\overline{M}$, it stood for 1,000,000. As an abbreviation M. A. stands for Master of Arts, M. D. Doctor of Medicine, D. Mus. Doctor of Music, MS. Manuscript, MSS. Manuscripts.

MACADAMIZING. A method of making roads, introduced by Mr. Mac Adam, which consists in breaking the stones so small that they may bind with the earth into a solid smooth mass.

MACARONIC POEM. A sort of burlesque poetry.

MACAROON A sweetmeat made of almonds.

MACCAW. A kind of parrot.

MACE (in Botany). A sort of spice, the second coat of the kernel of the nutmeg, a thin membranaceous substance, of an oleaginous nature, a yellow colour, an extremely fragrant aromatic perfume, and a pleasant but acrid and oleaginous taste.

MACE (in State Etiquette). In England, an ornamented staff, borne as an ensign of honour before a magistrate.

MACERATION (in Pharmacy). An infusion of ingredients in any liquid, in order to soften them.

MACHINE. An engine composed of several parts, put together by mechanical art and contrivance, for the purpose of raising bodies, assisting, regulating, or stopping their motions, &c. Simple machines comprehend the six mechanical powers. Compound machines are composed of the simple. Machines are likewise distinguished according to the purpose for which they are used into the architectural machine, electrical machine, hydraulic machine, &c.

MACHINE INFERNAL. A machine used in modern warfare, for the purpose of blowing up bridges, &c

MACKEREL. A well known fish, that visits the shores of the ocean in the summer season in vast shoals

MACKEREL-GALE. A strong breeze that is very favourable for mackerel fishing

MACULÆ (in Astronomy) Dark spots appearing on the luminous surfaces of the sun and moon, and even some of the planets.

MACULÆ (in Medicine). Discolorations on the surface of the body.

MADDER. A substance used in dying, which is extracted from the root of a plant botanically distinguished by the name of rubia. The madder root grows in France and other countries of Europe, that of Zealand is the best of European growth, but that which comes from the Levant is still more esteemed.

MADEIRA A rich wine made in the island of Madeira.

MADRIGAL. A short amorous poem

MAGAZINE (in Commerce). A warehouse for all sorts of merchandise.

MAGAZINE (in Military Affairs). A storehouse for arms, &c.

MAGAZINE (in Literature). A periodical work containing miscellaneous matter.

MAGGOT. The larva of flies, bees, &c.

MAGI. Astrologers and priests among the Persians and Asiatics.

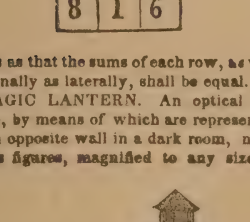
MAGIC. The black art, or the pretended art of producing supernatural effects, derived from the Persian magi.

MAGIC SQUARE (in Arithmetic). Figures so disposed into parallel and equal

| | | |
|---|---|---|
| 4 | 9 | 2 |
| 3 | 5 | 7 |
| 8 | 1 | 6 |

ranks as that the sums of each row, as well diagonally as laterally, shall be equal.

MAGIC LANTERN. An optical machine, by means of which are represented on an opposite wall in a dark room, monstrous figures, magnified to any size at



pleasure. This contrivance consists of a common lantern with a candle in it, as in the subjoined figure, to which is added a tube, and a lens that throws the light on the object, and another lens which magnifies the image on the wall. Then by contracting the tube, and bringing the glass nearer to the object, the image will be enlarged.

MAGNA CHARTA (in England). Or the great charter of liberties first granted by King John in the seventeenth year of his reign, A. D. 1215. This was afterwards renewed, with some alterations, by his son and successor Henry III. and repeatedly confirmed both by this king and King Edward I. The Magna Charta which is the first statute given in the statute books, is the same as that granted by Henry III in the ninth year of his reign.

MAGNESIA. A white, soft powder, and one of the primitive earths, having a metallic basis called magnesium. It is mostly extracted from talc, asbestos, boracite, and other stones.

MAGNESIUM. See MANGANESE

MAGNET. See LOADSTONE.

MAGNETIC or MAGNETICAL. Pertaining to the magnet or loadstone, as magnetic attraction, magnetic needle, &c.

MAGNETICAL MERIDIAN. A great circle in the heavens, which intersects the horizon in the points to which the magnetical needle, when at rest, directs itself

MAGNETIC NEEDLE. See NEEDLE

MAGNETISM. The property of attracting and repelling iron, as the loadstone does, which was partially known to the ancients, but it does not appear that they knew any thing of its directive power, which has been so usefully employed by the moderns. The natural magnet has the power of communicating its properties to iron or steel, which then becomes a magnet itself, and is employed as such on most occasions.

MAGNETISM, ANIMAL. A pretended science, which professed to cure diseases, particularly nervous disorders, by communicating a sort of magnetical fluid or virtue from one body to another.

MAGNIFYING (in Philosophy). The making objects appear larger by the means of glasses than they do to the naked eye; convex glasses, which have this power, are called magnifying glasses, of which microscopes are made.

MAGNITUDE. The extension of any thing, whether it be in one direction, as a line; in two directions, as a surface or in three directions, as a solid.

MAGNOLIA. A plant, of which the magnolia grandiflora, or the great magnolia, is the principal species. It is a

native of Florida, and bears a beautiful milkwhite flower.

MAGPIE. A cunning, variegated bird common in Europe and found in the western regions of the United States.

MAHOGANY (in Botany). A beautiful wood, belonging to a tree that grows in America and the West Indies, known by the botanical name of the swetenea mahogani, or the mahogany tree.

MAHOMETANS. Believers in the doctrines and divine mission of the impostor Mahomet

MAIDEN-HAIR. A plant, native of the south of France.

MAJESTY. A title given commonly to kings. It was first used in England in the reign of Henry VIII. instead of highness.

MAIHEM, or MAYHEM. A corporal wound or hurt, by which a man loses the use of any member. It originally applied to such corporal injuries as rendered a man less fit for war.

MAIL, or MAIL BAG. A leathern bag for the conveyance of letters.

MAIL-COACH. A coach of a particular construction for expeditious travelling, several of which are employed by government for the conveyance of letters to all parts of England. Mail coaches were first brought into use in 1784. In the United States the coaches belong to proprietors with whom the government contracts to carry the mail.

MAINPRIZE (in Law). Receiving a person into friendly custody who might otherwise be committed to prison, on security given for his forthcoming on a day appointed; a sort of bail.

MAINTENANCE (in Law). The wrongful upholding another in a cause.

MAJOR (in Military Affairs). An officer above a captain.

MAJOR-GENERAL. He who receives the general's order.

MAJOR OF A BRIGADE. The officer who receives the orders from the major-general.

MAJOR OF A REGIMENT. The officer next the lieutenant-colonel.

MAJOR, TOWN. The third officer of a garrison.

MALACHITE. A mineral, the green carbonate of copper, found frequently crystallized in long slender needles. It consists of copper, carbonic acid, oxygen, and water.

MALACOLITE. A mineral found in the silver mines in Sweden, and also in Norway, consisting of silica, lime, magnesia, alumina, oxide of iron, &c.

MAJUSCULÆ. Capital letters, in which Latin manuscripts, before the sixth century, were written.

MALTHA. A term applied to slaggy mineral pitch, as distinct from fluid petroleum, and from solid asphalt.

MALTHUSIAN. Pertaining to Malthus, who taught that population increased more rapidly than the means of subsistence could be made to increase, and consequently the undue increase of population should be checked, and early marriages discouraged.

MAMALUKE. A term applied to a military force in Egypt, which was destroyed by Mehemet Ali in 1811.

MAMMEA. The Mammee apple, the produce of a fruit-tree of tropical America.

MALLEOLI. In military science, bundles of wood, made of combustible materials, for setting on fire at night, to discover the position of an enemy.

MALTHA. In mineralogy, a soft glutinous substance which smells like pitch; mineral pitch.

MALVACEÆ. In botany, a natural order of exogenous plants, of which the Malva, or Mallow tree, is the genus.

MAMMALIA, In zoology, the first grand division of vertebrated animals which suckle their young. Mammalogy is the science of mammiferous animals.

MAMMOTH. A fossil elephant of immense size, the bones of one of which were discovered buried in ice in the north of Russia.

MAN. In zoology and natural history, the great epitome of all science and art; the sole specific example of the only genus Homo, as contained in Cuvier's order Bimana. The great naturalist, Blumenbach, divides this species into five varieties. 1. The Caucasian variety, which includes all the ancient and modern Europeans, except the Fins; the former and present inhabitants of Western Asia, as far as the River Oby, the Caspian Sea, and the Ganges (that is, the Assyrians, Medes, and Chaldeans; the Sarmatians, Scythians, and Parthians; the Philistines, Phœnicians, Jews, and the inhabitants of Syria, generally; the Tartars, properly so called; the tribes actually occupying the chain of the Caucasus; the Georgians, Circassians, Mingrelians, and Armenians; the Turks, Persians, Arabians, Afghauns, and Hindoos of high castes), and the Northern Africans, the Egyptians, Abyssinians, and Guanches. 2. The Mongolian variety which includes the tribes of Central and Northern Asia; as the Mongolians, Calmucks, and Buriats; the Mantchoos, Da-urians, Tungooses, and Coreans; the Samoides, Yukagers, Koriacs, Tschuktschi, and Kamtschadales, the Chinese and Japanese, the inhabitants of Tibet and Bootan, of Tonquin, Cochin-China, Ava, Pegu, Cambodia, Laes, and Siam; the Finnish races of Northern Europe, as the Lap

landers and the tribes of Esquimaux. 3. The Ethiopian variety, comprehending all the nations of Africa not included in the first variety. 4. The American variety, including all the native Americans except the Esquimaux. 5. The Malay variety, which includes the inhabitants of Malacca, Sumatra, Java, Borneo, Celebes, and the adjacent Asiatic Islands; of the Molucca, Ladrone, Philippine, Marian, and Caroline groups; of New Holland, Van Diemen's Land, New Guinea, New Zealand, and of all the islands of the South Sea. Cuvier's arrangement, however, differs from that of Blumenbach; he distinguishes only three principal divisions—the Caucasian, the Mongolian, and the Ethiopian; leaving the Malay and American varieties as doubtful.

MANCHOO, or MANTCHOO. The language spoken in Manchooria, and at the court of China.

MANITOU. The name given by the American Indians to their spirits or gods.

MANDAMUS (in Law). A writ originally granted by the king, so called from the first word, Mandamus, we command, commanding corporations and inferior courts, or other persons, to do some particular thing, as to admit any one to an office and the like.

MANDARIN. A Chinese magistrate.

MANDATE. A judicial command of the king.

MANDIBLE The jaw of brutes; in Ornithology, the bill of birds

MANDRAKE. A plant, whose divided root bears some resemblance to the legs and thighs of a man.

MANDRIL, or MANDERIL. A wooden pulley, part of a turner's lathe.

MANEGE. A riding school; also the art of horsemanship, or the management of both the horse and the rider.

MANEQUIN (in the Fine Arts). A little statue or model, usually made of wood or wax, and so contrived as to be put into posture at pleasure.

MANGANESE. A mineral which, when pure, is of a grayish white colour, and considerable brilliancy; it has neither taste nor smell, is of the hardness of iron, and very brittle, when reduced to powder it is attracted by the magnet. The ore of manganese is remarkable for its spontaneous inflammation with oil. It is much used by glassmakers and potters, and is sometimes called soap of glass.

MANGE. A cutaneous disease incident to horses, dogs, and other domestic animals; it is attended with eruptions and loss of hair

MANGEL WURZEL. A sort of turnip that is nearly in the shape of a carrot, but much larger; it is reckoned a good winter fodder for cows, and has been sometimes used in Germany as the food of man in times of scarcity, whence it derives its name, signifying literally root of scarcity.

MANGER. A trough out of which horses eat their corn or dry food.

MANGER (among Mariners). A place on the deck of a vessel for receiving the sea water.

MANGROVE TREE. A tree of Surinam, which, like the banium tree, sends forth numerous branches, that take root in the earth and form fresh trees, so as to make a wood out of one main stock.

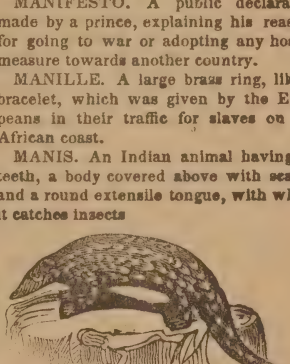
MANICHEES. The followers of a Persian impostor in the third century, who taught that there were two independent principles or gods, one good and one evil.

MANIFEST (in Commerce). The draught of the cargo of a ship.

MANIFESTO. A public declaration made by a prince, explaining his reasons for going to war or adopting any hostile measure towards another country.

MANILLE. A large brass ring, like a bracelet, which was given by the Europeans in their traffic for slaves on the African coast.

MANIS. An Indian animal having no teeth, a body covered above with scales, and a round extensile tongue, with which it catches insects



MANNA. The food sent from heaven for the support of the Israelites in the wilderness.

MANNA (in Botany). A sweet juice or gum which flows from many trees and plants in Syria, and also in Calabria, where it exudes from two species of the ash. Its smell is strong, its taste rather nauseously sweet, if exposed in hot coals it swells up, takes fire, and leaves a light coal, which affords a fixed alkali. It is dissolved by water, and affords by distillation water, acid, oil, and ammonia.

MANOMETER, or MANOSCOPE. An instrument for showing the alterations in the rarity and density of the air. It differs from the barometer, in as much as the latter only serves to measure the weight of the

atmosphere, but the former the density of the air in which it is found.

MANOR (in Law). In England, a noble sort of fee anciently granted by the king to some baron to dwell upon, and to exercise a jurisdiction greater or less within that circuit: this was in part let out to the lord's tenants, and part was reserved for the use of his family, which latter was called terra dominicalis, or demesne. Some part was left uncultivated, which was called the lord's waste.

MANSION (in Law) The lord of the manor's chief dwelling house within his fee

MANSLAUGHTER (in Law). The killing a man by misadventure without malice prepense.

MANTELETS (in Fortification). A kind of moveable parapets used in a siege.

MANTIS. A sort of insects, of which there are numerous species, distinguished by the difference and singularity of their shape. The chief species in Europe is the camel cricket, or praying mantis, so called because when sitting it holds up its two fore legs as if in the attitude of prayer. This is a rapacious insect, that attacks other insects with great fierceness.

MANUAL. Pertaining to the hand, as manual operation, an operation performed by the hand.

MANUAL, Sign (in Law). The signing of a deed or writing, under hand and seal.

MANUAL (in Literature). Any book small enough to be carried in the hand, which contains a compendium of science.

MANUFACTURE. Any commodity made by the hand, or any thing formed from the raw materials or natural productions of a country, as cloths from wool, and cotton or silk goods from the cotton and silk, &c.

MANUFACTURER One who employs his capital in manufacturing goods

MANUMISSION (in Law). The act of enfranchising, or setting a slave or bondman free.

MANURE. Whatever serves to enrich the ground and fit it for husbandry purposes, as dung, loam, soap ashes, &c

MANUSCRIPT, abbreviated MS. or in the plural MSS. A book or copy written with the hand, in opposition to a printed copy.

MAP. A plane figure representing the surface of the earth, or any part thereof, together with the several divisions of land and water, and the several countries, towns, and the like. It is called a universal map when it represents the whole surface of the earth, or the two hemispheres and a particular map when it only represents particular regions or countries A map is properly a representation of land as distinguished from a chart, which only represents the sea or seacoast.

MAPLE (in Botany). A tree of which there are numerous species, classed by Linnæus under the scientific name acer The acer sacharinum, or sugar maple, in North America, is one of the most remarkable species, from which, by tapping the trees early in the spring is procured a vast quantity of sugar, a tree of an ordinary size yielding in a good season from twenty to thirty gallons of sap

MARABUTS, or MARABOOTS. Among the North Africans, a kind of saints or sorcerers held in high estimation; maraboot feathers, or marabou, fine delicate feathers, the white kind being very valuable, much used in the dress of ladies, obtained from a large crane of Asia and Africa.

MARACAN. A species of parrot in Brazil.

MARAI. In the Pacific Islands, a sacred enclosure or temple.

MARAJAH, or MAHARAJAH. A Hindoo sovereign prince.

MARASCHINO. A spirit or liquor made from the marasca cherry of Dalmatia.

MARBLE. A calcareous stone or mineral, of compact texture, and susceptible of a beautiful polish; a little ball of marble. There are many varieties of marble, the finest of which are the Carrara and Parian, as used by the ancient Greeks.

MARC. The refuse matter of grapes or other fruit from which the juice has been expressed.

MARCASITE. Iron pyrites, occurring crystallised in modified rhombic prisms, in stalactite crusts, &c., nearly tin-white, and more strongly metallic in lustre than ordinary pyrites, used in the manufacture of sulphur and sulphuric acid, also for ornamental purposes.

MAREMME. An Italian term for those unwholesome sea-marshes which diffuse with more or less virulence pestilential exhalations along the whole west coast of Italy.

MARCELINE. A mineral of a greenish-black color and vitreous lustre, consisting of silica, oxide of manganese, oxide of iron, and alumina.

MARGARAMIDE. A substance obtained from ammonial soap.

MARGARATE. A salt formed of margaric acid and a base.

MARGARIC, MARGARITIC. In chemistry. noting a fatty acid prepared from hog's lard and potash.

**MARINER.** One accustomed to a sea life.

MARINES. Soldiers who serve on board a ship, and trained to fight either by sea or on land.

MARITIME. Bounded by the sea, as a maritime province or county, that is, one bounded by the sea; so likewise maritime countries, such as England or Holland.

MARGARITE. In mineralogy, pearl mica, a thinly-laminated mineral of a greyish, reddish, or yellowish-white color: sp. gr. 3·0; H=3·5—4·5.

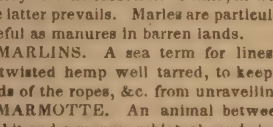
MARGARON. In chemistry, a solid fatty matter, obtained by distilling margaric acid with excess of lime.

MARGINATE, MARGINATED. In conchology, denoting a prominent margin or border. In entomology, an epithet used when the sharp edge is marginated on the outside, and surrounds the surface with a narrow border.

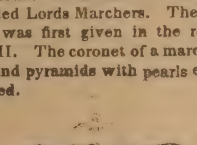
MARL. A sort of fat earth, consisting of clay and the carbonate of lime, in which the latter prevails. Marles are particularly useful as manures in barren lands.

MARLINS. A sea term for lines of untwisted hemp well tarred, to keep the ends of the ropes, &c. from unravelling.

MARMOTTE. An animal between a rabbit and a mouse, which abounds in the Alps. The animal common in the United States called woodchuck, is a species of marmotte; the prairie dog, found in the plains of Missouri is another species of marmotte.



**MARQUIS (in England).** A title of honour next to a duke, first given to those who governed the Marches of Wales, who were called Lords Marchers. The title of Marquis was first given in the reign of Richard II. The coronet of a marquis has flowers and pyramids with pearls on them intermixed.



**MARQUE.** See LETTERS OF MARQUE.

**MARQUETRY.** A curious kind of inlaid work, composed of several fine, hard pieces of wood, of various colours fastened in thin slices on the ground and sometimes enriched with silver, ivory and other matters.

MARROW. A fat and oleaginous substance in the bones of animals.

MARS (in Astronomy). One of the seven primary planets, distinguished by the red colour of his light, and usually marked by this character ♂. He performs his revolution in his orbit in 686 days 23 hours 30 minutes and 39 seconds, and his revolution on his axis in 24 hours 40 minutes.

MARS (in the Heathen Mythology) The son of Jupiter and Juno, and the god of war, whose common attributes are his helmet, spear, and sword.

**MARTEN.** A species of swallow, that builds under the eaves of houses, but not in chimneys.

MARTEN, or MARTLET. A large kind of weasel found in Northern countries. It has a small head, an agile body, and lively eyes. The fur of the marten is valuable. There are two kinds in America, the Pine marten, and Pennants marten called Fisher.

**MARSHAL (in England).** The chief officer of arms, as the Earl Marshal a great officer of the crown, who takes cognizance of all matters of the law of arms; the name also of other officers, as the Knight Marshal or Marshal of the King's House, Marshal of the King's Bench, who has the custody of the King's Bench prison, and Marshal of the Exchequer, to whom the king's debtors are committed. In this country, the term is applied to the executive officer, attendant upon the United States Courts.

MARSHAL, or FIELD MARSHAL (in Military Affairs). In England, the highest officer in the army.

MARSHALLING (in Heraldry). The disposing of the several coats of arms belonging to distinct families in one and the same escutcheon, together with their ornaments; one branch of the science of heraldry.

MARSHALSEA (in England). A court originally instituted to hear and determine causes between the servants of the king's household and others within the verge of the court, that is within twelve miles round Whitehall, in London.

MARTIAL LAW (in England). The law that has to do only with soldiers and seamen where the king's army is on foot. This law differs from the common law, in as much as it depends upon the pleasure of the king. In cases of riots and rebellions, Martial Law is sometimes proclaimed when the civil power is not strong enough to preserve the peace.

MARTINGALE (in the Manege). A thong of leather fastened at one end of the girts under the belly of the horse.

MARTINGALE. A sea term for a rope, extending from the jib boom to the end of the bumkin.

MASCULINE GENDER. The gender of nouns that denote the male sex.

MASH. Bran scalded in hot water and given to a horse or cow, &c

MASHES OF A NET. Holes formed by the strings of a net.

MASHING. The mixing the malt and hot water together in brewing.

MASK. A covering for the face.

MASONRY. The art of hewing, cutting, or squaring stones, and fitting them for the use of buildings; also of joining them together with mortar.

MASONS, or WORKERS IN STONE. Were incorporated in London about the year 1419.

MASONS, FREE, or ACCEPTED MASONS. A fraternity of great antiquity, so called because the first founders of that society were persons of that profession They are bound by an oath of secrecy not to reveal any thing that passes within the society, and the members throughout the whole world are known to each other, by certain secret signs.

MASORITES. The rabbies who, under Ezdras the scribe, are supposed to have purged the Hebrew Bible of the errors that crept into it during the Babylonish captivity. They divided the canonical books into twenty-two, and these twenty-two books into chapters, and the chapters into verses.

MASQUE (in Architecture). Certain pieces of sculpture representing hideous forms, which serve to fill up vacant spaces.

MASQUERADE. An exhibition in which persons, having masks or vizards, meet together and represent different characters.

MASS (in Ecclesiastical Affairs). The ritual or service of the Romish church; when the prayers are simply rehearsed, without singing, it is called Low Mass: but when the prayers are sung by choristers, and the service is performed by a deacon and subdeacon, it is called High or Grand Mass.

MASSES (in Painting). The parts of a picture containing great lights and shadows.

MASSICOT. A yellow oxide of lead.

MASS-PRIEST. The name for priests who are kept in chantries or at particular altars, to say so many masses for the souls of the deceased.

MAST. The upright beam or post on the deck of a vessel, to which the yards sails, &c. are fixed. The mainmast is the largest mast in the ship; the foremast is the next in size, standing near the stem of the ship; the mizenmast, the smallest of the three, stands between the mainmast and the stern.

MASTER (in England). The name of several officers who preside in their several departments, as Master of the Assay Master of the Ceremonies, Master of the King's Household, &c.

MASTER OF THE FACULTIES (in England). An officer under the Archbishop of Canterbury, who grants licenses and dispensations.

MASTER OF THE HORSE (in England). A great officer of the crown, who orders all matters relating to the king's stables.

MASTER OF THE ORDNANCE (in England). A great officer who has charge of all the kings ordnance and stores.

MASTER OF THE ROLLS (in England). The chief assistant of the lord chancellor and lord keeper. He has the keeping of all the rolls and grants, &c.

MASTER OF A SHIP. An officer in a public ship who inspects the provisions, stores, &c.

MASTER AT ARMS. In a ship of war, he who has charge of the small arms, and exercises the petty officers, &c.

MASTER OF ARTS. The second degree taken up at Cambridge and Oxford in

England, to which candidates are not admitted until they are passed seven years standing. In the Scotch, and other universities, this is the first degree.

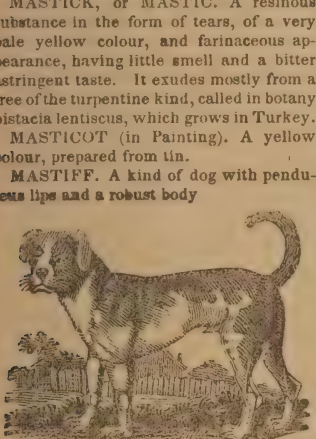
MASTERS IN CHANCERY. In Eng- Assistants to the Lord Chancellor, of which there are twelve ordinary masters, who sit in court every day during term, taking affidavits and acknowledgments of deeds, &c. To them are referred all interlocutory orders and computing damages, &c. There are also Masters Extraordinary appointed to act in every county beyond ten miles distant from London.

MASTICATORY. A medicine that requires to be chewed, to promote the saliva.

MASTICK, or MASTIC. A resinous substance in the form of tears, of a very pale yellow colour, and farinaceous appearance, having little smell and a bitter astringent taste. It exudes mostly from a tree of the turpentine kind, called in botany pistacia lentiscus, which grows in Turkey.

MASTICOT (in Painting). A yellow colour, prepared from tin.

MASTIFF. A kind of dog with pendulous lips and a robust body



MASTODON, or MAMMOTH. This animal, which must have been many times larger than the elephant, is now extinct, and all that remains to attest its former existence, are the bones which are found deeply imbedded in the earth. These bones have been discovered in various parts of the United States, but as yet only one nearly entire skeleton has been obtained. This was dug up near Newburg, in the State of New York, and is now in the museum at Philadelphia.

It is impossible to determine to what race this huge animal belonged, except that its formation and modes of living were analogous to those of the elephant. That he was not of the same species, is probable; that he was nearly allied to the rhinoceros and hippopotamus, is also probable

The bones of prodigiously large animals of the elephant kind have been found in Siberia, and those of the mastodon have been found in various parts of Europe The following striking observations on this subject, are by Dr. Godman.

'The emotions experienced, when for the first time we behold the giant relics of this great animal, are those of unmingled awe. We cannot avoid reflecting on the time when this huge frame was clothed with its peculiar integuments, and moved by appropriate muscles; when the mighty heart dashed forth its torrents of blood through vessels of enormous caliber, and the mastodon strode along in supreme dominion over every other tenant of the wilderness.

'However we examine what is left to us, we cannot help feeling that this animal must have been endowed with a strength exceeding that of other quadrupeds, as much as it exceeded them in size; and, looking at its ponderous jaws, armed with teeth peculiarly formed for the most effectual crushing of the firmest substances, we are assured that its life could only be supported by the destruction of vast quantities of food.

'Enormous as were these creatures during life, and endowed with faculties proportioned to the bulk of their frames, the whole race has been extinct for ages No tradition nor human record of their existence has been saved, and but for the accidental preservation of a comparatively few bones, we should never have dreamed that a creature of such vast size and strength once existed, nor could we have believed that such a race had been extinguished forever Such, however, is the fact; ages after ages have rolled away, empires and nations have arisen, flourished, and sunk into irretrievable oblivion, while the bones of the mastodon, which perished long before the periods of their origin, have been discovered, scarcely changed in colour, and exhibiting all the marks of perfection and durability

'That a race of animals so large, and consisting of so many species, should become entirely and universally extinct, is a circumstance of high interest; for it is not with the mastodon as with the elephant, which still continues to be a living genus, although many of its species have become extinct; the entire race of the mastodon has been utterly destroyed, leaving nothing but the "mighty wreck" of their skeletons, to testify that they once were among the living occupants of this land.'

MATCH (in Gunnery). A rope slightly twisted and prepared with inflammable ingredients, which will burn for a length of time without going out.

MATCHLOCK. A kind of harquebuss, which was fired with a match.

MATE. An assistant officer on board a vessel

MATER. See ALMA MATER

MATERIALIST One who maintains that the soul is material

MATERIA MEDICA. All that is used in the art of medicine for the prevention or cure of diseases, whether prepared from vegetables, minerals, or animals.

MATHEMATICS. The science which teaches or treats of whatever is capable of being numbered or measured, and is divided into arithmetic, or that branch which has numbers for its object, and geometry, which treats of magnitude. It is also distinguished into Pure Mathematics, which consider quantities abstractedly, and without any relation to matter, and Mixed Mathematics, which treat of the properties of quantity, as applied to material or sensible objects, and interwoven with physical considerations, as astronomy, geography, navigation, mechanics, surveying, architecture, &c.

The following list of the writers who have distinguished themselves in the different branches of the mathematical science will furnish the best historical view of mathematics in general.

B. C.

722 Confucius, the Chinese philosopher
600 Thales, a Greek astronomer. Anaximander, an inventor of globes.
500 Cleostratus, an astronomer. Anaxagoras, a philosopher Anaximines, a diallist. Pythagoras, an astronomer and geometrician.
400 Plato, a geometrician. Euctemon, an astronomer. Meton, the inventor of the Metonic cycle Hippocrates, a geometrician. Oenopides, a geometrician. Zenodorus, a geometrician
300 Aristotle, a philosopher. Calippus, an astronomer, and inventor of the Calyppic period. Dinocrates, an architect. Theophrastus, a philosopher. Xenocrates, a philosopher. Eudoxus, an astronomer and geometrician. Pytheas, an astronomer. Archytas, a philosopher. Aristæus, a geometrician. Denostratus, a geometrician. Menechmus, a geometrician.
200 Apollonius, a geometrician, author of the Conic Sections. Archimedes, a geometrician, and inventor of machines. Aristarchus, an astronomer. Eratosthenes, a mathematician. Euclid, a geometrician, author of the Elements. Aratus, an astronomer and poet. Aristillus, an astronomer. Nicomedes, a geometrician, the inventor of the conchoid
100 Hipparchus, an astronomer, numbered the stars. Ctesibius invented water pumps Hero invented the clepsydra and a fountain

A. D.

Cleomedes, a Roman astronomer. Geminus, an astronomer of Rhodes. Manilius, astronomer and poet. Manilius, an astronomer. Vitruvius, an architect Julius Cæsar, the reformer of the calendar. Sosigenes, an Egyptian astronomer. Menelaus, a writer on spherical trigonometry. Possidonius, a mathematician Theodosius, a writer on spheres. Jamblichus, a Syrian philosopher.
100 Nicomachus, a Greek mathematician. Sextus Frontinus, an engineer. Ptolemy, an Egyptian astronomer and geographer, author of the Almagist. Hypsicles, a Greek mathematician.
200 Diophantus, a Greek algebraist.
300 Jamblichus, a Syrian philosopher. Pappus, a Greek commentator on Apollonius, &c. Theon, a Greek commentator on Ptolemy, &c
400 Hypatia, daughter of Theon, a commentator on Diophantus. Proclus, a Greek commentator on Euclid. Diocles, a Greek geometrician, discoverer of the cissoid. Serenus, a Greek geometrician.
500 Marinus, a geometrician of Naples Arithemius, an architect. Eutocius, a Greek geometrician. Isodorus, an architect.
600 The Venerable Bede, an English monk and philosopher.
700 Almansor the Victorious, an astronomer. Hero the Younger, a Greek geometrician.
800 Al Maimon the Caliph, an astronomer Al Raschid, a Persian astronomer. Al fragan, an Arabian astronomer. Albategni, an Arabian astronomer.
900 Pope Silvester, II. a mathematician
1000 Ibn Ionis, an Arabian astronomer. Geber Ben Alpha, an Arabian commentator on Ptolemy's Almagest.
1100 Alhazen, an Arabian optician and astronomer.
1200 Leonard de Pisa, an Italian, and the first European algebraist. Nassir Eddin, a Persian astronomer. Alphonsus, king of Castile, an astronomer, and author of the Alphonsine tables. John Halifax or Sacrobosco, an English mathematician. Jordanus Nemorarius, an arithmetician Roger Bacon, an English philosopher Campanus, an astronomer Vitellio, an optician.
1300 Albano, an Italian mathematician Ascoli, an Italian mathematician. John of Saxony, an astronomer.
1400 Blanchini, an Italian astronomer Moschopulus, a modern Greek arithmetician. Purbach, an astronomer. Regiomontanus, or Muller, an astronomer of Vienna. Cardinal Cusa, an astronomer Henry, son of John king of Portugal, the inventor of charts. Ulug Beg, a Persian astronomer. Lucas de Burgo, or Pacciolli, a German algebraist Bernard, an Italian astronomer. Dominic Novera, an Italian astronomer.
1500 Copernicus, a German astronomer, and the reviver of the solar system. Peter Apian, or Appian, a German astronomer Cardan, an Italian algebraist.

A. D

1500 Commandine, an Italian commentator on Euclid and other ancient mathematicians. Ferreus, an Italian mathematician Maurolycus, an Italian mathematician Nonius, a Portuguese mathematician. Sturmius, a German arithmatician. Tartaglia, an Italian algebraist. Vieta, a French algebraist Ferrari, an Italian algebraist. Stevinus, a Flemish mathematician. Mercator, a German geographer. Ramus, a French mathematician. Recorde, an English algebraist. Stifelius, a German algebraist. Ubaldi Guido, an Italian mathematician. Tycho Brahe, a Danish astronomer. Lord Bacon, an English philosopher. Galileo, an Italian philosopher. Bombelli, an Italian algebraist. Castelli, an Italian mathematician. Clavius, a German geometrician. Digges, an English philosopher.

1600 Briggs, an English arithmetician, the inventor of logarithms. Des Cartes, a French geometrician and algebraist, discovered the equation of curve lines. Kepler, a German astronomer, explained the laws of celestial motion. Napier, a Scotch arithmetician, improved the system of logarithms. Torricelli, an Italian philosopher and discoverer of the barometer. Bayer a German astronomer. Gassendi, a French astronomer. Longomontanus, a Danish mathematician. Harriot, an English algebraist. Horrox, an English astronomer. Kircher, a German philosopher. Oughtred, an English geometrician and arithmetician. Porta Baptista, the inventor of the camera obscura. Cavalerius, a Milanese algebraist. Brouncker, an Irish mathematician. Fermat, a French arithmetician, wrote on the theory of numbers. Pascal, a French philosopher, introduced the doctrine of chances. Wallis, an English mathematician, first treated on the arithmetic of infinite quantities. Bullaldus, a French astronomer. Deschales, a French geometrician. Girard, a French algebraist. J. and D. Gregory, a Scotch family of mathematicians, the first of whom invented a telescope, &c. the second edited Euclid. Hevelius, a Prussian astronomer. Horrebow, a Danish astronomer. Mersenne, a French geometrician. Riccioli, an Italian astronomer, geometrician and chronologist. Roberval, a French geometrician. Tacquet, a French mathematician. Seth Ward, an English geometrician and arithmetician. John de Witt, a Dutch mathematician James Bernoulli, a Swiss mathematician. Barrow, an English mathematician. Hooke, an English philosopher, made many discoveries in mechanics. Huygens, a geometrician, diallist, and horologist, discovered the evolute of curves. Leibnitz, a German geometrician and arithmetician, wrote on the differential calculus. L'Hopital, a French mathematician. Flamstead, an English astronomer. Oldenburgh, an English mathematician and astronomer. Boyle, an English

A. D

philosopher. Ozanam, a French mathematician. Pell, an English algebraist Schooten, a Dutch mathematician Wren, an English architect.

1700 Newton, author of a new system of philosophy. John Bernoulli, a Swiss mathematician. Bradley, an English astronomer, discovered the aberration of the stars. Cotes, an English geometrician. Taylor, an English arithmetician and optician. Cassini, D. and J., French astronomers. Gravesande, a Dutch mathematician. Keill, a Scotch astronomer. La Hire, a French geometrician and astronomer. Saunderson, an English mathematician. Saurin, a French mathematician. Wolfius, a German mathematician. Clairaut, a French mathematician. Maclaurin, a Scotch algebraist. De Moivre, a French arithmetician. Simpson, an English mathematician. Bellidor, a French engineer. Bernoulli, N. and D., Swiss philosophers. La Caille, a French astronomer Collins, an English mathematician Dolland, an optician. Maupertius, a French astronomer and geometrician. Meyer, a German astronomer, and author of some tables. Robins, an English mathematician and engineer. Simson, a Scotch geometrician, translator and editor of Euclid's Elements D'Alembert, a French mathematician Euler, a German geometrician and algebraist. Landen, an English algebraist, author of the Residual Analysis. Lalande, a French astronomer. Maskelyne, an English astronomer. Waring, an English arithmetician. Bailly, the French historia of astronomy Berkeley, an English philosopher. Boscovitch an Italian mathematician and philosopher. Emerson, an English arithmetician and algebraist. Montucla, a French mathematician, and the historian of mathematics. Horsley, an English mathematician.

1800. During the present Century, works on Mathematics, have been numerous. We can only mention a few of the writers. Chastles, Brusseles, 1837; Plucker, 1828-31; Ponceld, Paris, 1822; Steiner, Berlin, 1832; Benjamin Pierce, Boston, 1858; Charles Davis, New York, 1855; Mulcahy, 1864.

MATERIA MEDICA. In medical science, that branch which treats of the articles employed in the practice of medicine, and explains the nature and mode of action of those substances which are had recourse to for the restoration of health.

MATICO. The leaves of a Peruvian plant, used as a powerful styptic.

MATRICE, or MATRIX. The womb; the cavity in which anything is formed, and which gives it shape; the mould or form in which printers' types are cast. In mineralogy, the place where anything is deposited or formed. In dyeing, a term applied to the five simple colors.

MAUVE. A purple dye obtained from aniline and benzol, two of the constituents of coal-tar.

MATRON (in Law). A married woman of experience, who is in certain cases empannelled upon juries

MATT. Rope yarn, junk, &c. beaten flat and interwoven to save the yards, &c. from galling.

MATTE. Peruvian tea, much used in South America.

MATTER. That which is the object of our senses, and appears under the diverse forms of solids, fluids, and gases.

MAUNDY THURSDAY (in England). The Thursday before Good Friday, in which the king is accustomed to give alms to the poor.

MAUSOLEUM. A stately sepulchre built by Artemisia, queen of Caria, for her husband Mausolus; also any pompous sepulchral monument.

MAXIMUM (in Mathematics). The greatest quantity attainable in any case.

MAY. The fifth month in the year.

MEAD. An agreeable drink, made of honey and water boiled and fermented.

MEADOW. Ground covered with grass, which is commonly left for hay.

MEADOW SWEET. A herb with crumpled leaves, something like those of the elm, growing in meadows. Its flower expands in the form of a rose

MEAL. The edible part of corn, particularly of barley.

MEAN (in Mathematics). The middle between two extremes, as a mean motion, mean distance, arithmetical mean, geometrical mean, &c.

MEAN ARITHMETICAL. Half the sum of the extremes.

MEAN GEOMETRICAL, or A MEAN PROPORTIONAL. The square root of the product of the two extremes.

MEAN HARMONICAL. Double a fourth proportional to the sum of the extremes.

MEAN TIME, or EQUAL TIME. That which is measured by an equable motion, as a clock.

MEASLES. A disorder incident to children, consisting of a fever, attended with inflammation, cough, and difficulty of breathing

MEASURE. Any given quantity by which the quantity, length, breadth, thickness, and capacity of other things may be estimated.

MEASURE (in Geometry Any certain quantity assumed as one, or unity, to which the ratio of other similar quantities is expressed, thus the measure of a line is the extension of a right line at pleasure, which is to be considered as unity, as an inch, a foot, or a yard.

MEASURE (in Arithmetic). A certain number or quantity, which being repeated a certain number of times is equal to another that is bigger, to which it has relation, as 6 is the measure of 36.

MEASURE (in Music). That note, as the semibreve, by which all the other notes are measured or adjusted to its value.

MEASURE (in Poetry). A certain number of syllables metrically measured

MEASURE (in Commerce). Determinate quantities, by which all things that are bought and sold are measured as to their quantity, and estimated as to their rate: these are various in different countries.

MECHANICAL Pertaining to mechanics.

MECHANICAL AFFECTIONS (among Philosophers). Such properties of matter or body as arise from its figure bulk or motion.

MECHANICAL PHILOSOPHY. That which explains the phenomena or appearances of nature from mechanical principles, viz. from the motion, rest, size, figure, &c. of the small particles of matter This is the same as the corpuscular philosophy.

MECHANICAL POWERS. The six simple machines to which all others, how complex soever, may be reduced, and of the assemblage whereof they are all compounded; these are the simple lever, the wheel and axis, the pulley, the inclined plane, the wedge, and the screw. These six might be reduced to two, for the pulley and wheel are only assemblages of levers, and the wedge and screw are inclined planes.

MECHANICAL SOLUTION OF A PROBLEM (with Mathematicians). Is a construction or proof not done in a strictly geometrical manner, but by the help of instruments.

MECHANICS. The science of motion, or that branch of mixed mathematics which treats of the effects of powers or moving forces, and applies them to machines and engines. Newton divides this science into practical and rational; the former of which relates to the mechanical powers, namely, the lever, balance, wheel and axis pulley, wedge, screw, inclined

mane, &c (see MECHANICAL POWERS); and the latter, that is, rational mechanics, relates to the theory of motion, showing when the forces and powers are given, how to determine the motion that will result from them; and conversely, when the circumstances of the motion are given, how to trace the forces or powers from which they arise.

As to the practical part of mechanics, this was doubtless one of the first branches of knowledge which necessity would lead men to acquire, it being impossible to pursue any of the mechanic arts successfully, without the aid of mechanical powers in raising weights or exerting forces. That all the mechanical powers were well known to the ancients is certain from the number and perfection of the machines which they had in use. The theoretical part of mechanics appears, however, not to have engaged their attention before the time of Archimedes, who particularly applied himself to this subject; and, in his book on Equiponderants, has given us the theory of the lever, the inclined plane, the pulley, and the screw. From his time to the sixteenth century, the theory of the mechanical science remained, with little or no addition or change. Stevinus, a Flemish mathematician, revived the subject by treating on the laws of equilibrium, of a body placed on an inclined plane, &c.; and Galileo afterwards, in his treatise on statics, extended his researches on the theory of the inclined plane, the screw, and all the mechanical powers, but more particularly on the theory of accelerated motion. Torricelli, a pupil of Galileo, added several propositions concerning projectiles; Huygens treated of the motion of bodies along given curves; and, in 1661, Huygens, Wallis, and Sir Christopher Wren all discovered the true laws of percussion, without any previous communication with each other. Henceforth the study of mechanics, like every other branch of the mathematical science, was illustrated and enlarged by different writers of great name. as by Newton, in his Principia; Leibnitz, in his Resistentia Solidorum; Deschales, in his Treatise on Motion; Parent, in his Elements of Mechanics and Physics; Oughtred, in his Mechanical Institutions; Keil, in his Introduction to True Philosophy; De la Hire, in his Méchanique; Ditton, in his Laws of Motion; Gravesande, in his Physics; Euler, in his Tractatus de Motu; Muschenbrock, in his Physics; Bossu, in his Mécha niques; Lagrange, in his Méchanique Analytique, Atwood, in his Treatise, and recently by Wood, Whewell, and Mosely.

MEDAL. An ancient coin, or a piece of metal in the form of a coin, stamped to preserve the memory of some illustrious person, or of some distinguished event

MEDALLION. A very large medal, supposed to be anciently struck by the emperors.

MEDICINE. The art of preserving health, curing diseases, and alleviating maladies. It is an art that assists nature in the preservation of health by the use of proper remedies.

MEDIETAS LINGUÆ (in England) A jury consisting of half natives and half foreigners, which is empannelled in cases where the party to be tried is a foreigner.

MEDIMNO. A corn measure in the Levant, equal to nearly four English quarters.

MEDIUM (in Physics) That space or region through which a body in motion passes to any point; thus, ether is supposed to be the medium through which the heavenly bodies move; air is the medium through which bodies move near the earth, water the medium wherein fishes live and move.

MEDIUM, ÆTHERIAL. A subtle medium supposed by Newton to occupy every part of space, in which the planetary motions are performed without resistance and by means of which light is reflected, inflected, and refracted, heat is propagated and increased, and, in short, all the great operations of nature are supposed to be carried on through the agency of this universal medium.

MEDLAR. The fruit of a tree called, in Botany, the MESPILUS GERMANICA, which in its leaf resembles a laurel. The fruit, which in shape resembles an apple, is not eatable until it is in a state of rotten ripeness.

MEDULLA CEREBRI The soft substance of the brain, covered externally with a cortical substance of an ashy colour.

MEDULLA OBLONGATA. The beginning of the spinal marrow, or an extended portion of the brain.

MEDUSA (in Mythology). One of the three Gorgons, said to have been born with snakes on her head instead of locks of hair. Perseus cut off the head of Medusa, and placed it in the shield of Minerva.

MEDUSA. A sort of worms which, causing when touched a slight tingling and redness, are denominated sea-nettles.

MEERSHAUM. A fine sort of Turkish clay, of which pipes are made in Germany of various forms. It assumes a beautiful brown colour after it has been used for smoking for some time

MELLITE, or Honey-Stone. A mineral found first in Thuringia, which is of a honey-yellow colour, and is usually crystallized in small octaedrons.

MELLITIC ACID A substance procured from mellite.

MELODY (in Music). The agreeable sensation produced by a regular succession of different sounds.

MELOE. A sort of insects, of which the two principal species are the oil beetle, so called because, on being handled, it exudes from its legs, drops of a clear, deep yellow oil or fluid, of a very peculiar and penetrating smell; and the meloe vesicatorius, or Spanish fly, which is used in raising blisters

MELON A plant of the cucumber tribe, the flower of which consists of one bell-shaped leaf cut into several segments. The fruit is mostly of an oval shape, and filled with seeds.

MEMBRANE (in Anatomy). A broad, nervous, and fibrous substance, which serves as a covering for different parts of the body, particularly the brain and the viscera.

MEMENTO A hint to awaken the memory.

MEMOIRS. Histories written by those who have been witnesses of the transactions, and acquainted with the persons, which they describe.

MEMORANDUM. A short note, for the better remembrance of a thing.

MEMORIAL. A monument, or whatever else serves to call a thing or person to remembrance

MEMORY, Artificial. A method of assisting the memory by some artificial contrivance, as that of forming certain words, the letters of which shall signify the date or era to be remembered. Various devices of this kind have been hit upon at different times.

MENDICANTS. Monks so called, who go about begging alms.

MENSTRUUM. A liquid which serves to extract the virtues of any substance, by infusion, decoction, &c. Water is the menstruum of all salts, oils of resins, acids of alkalies and the like.

MENSURATION. The art of measuring lines, superficies, and solids, which, in consequence of its extensive application to the purposes of life, is considered as of the greatest importance.

Euclid treats of mensuration, as far as regards surfaces, only of the measuring of triangles; and in regard to curvilinear figures, he attempted the measurement of the circle and the sphere. Archimedes carried this subject to a much greater extent: he found the area of a parabola to be two thirds of its circumscribing triangle; which, with the exception of the lunules of Hippocrates, was the first instance of the quadrature of a curvilinear space He likewise determined the ratio of spheroids and conoids to their circumscribing cylinders, and has left us his attempt at the quadrature of the circle. He demonstrated that the area of a circle is equal to the area of a right-angled triangle, of which one of its sides about the right angle is equal to the radius, and the other to the circumference; and thus reduced the quadrature of the circle to the determining the ratio of the circumference to the diameter, a problem, in the solution of which he could only arrive at an approximation to the truth, showing that the ratio between the circumference and the diameter was less than that of 7 to 22. What Archimedes failed to effect in this respect has continued to this day unattainable, notwithstanding the efforts which have been made by subsequent mathematicians, particularly within the last three centuries, to arrive at a greater approximation. As all hopes of accurately squaring the circle and some other curves were at length given up, mathematicians applied themselves to the finding the most convenient series for approximating towards their true lengths and quadratures; and the science of mensuration has in consequence assumed a more consistent form.

MERCAPTAN. A liquid composed of sulphur, carbon, and hydrogen.

MEPHITIC. Poisonous, like the Mephitis, or Damp, as it is called by the miners; as Mephitic Air, another name for nitrogen gas, on account of its noxious quality; and Mephitic Acid, carbonic acid, so called because it cannot be respired without causing death

MERCATOR'S CHART. A sea chart, in which the parallels of latitude and the meridians are represented by straight lines.

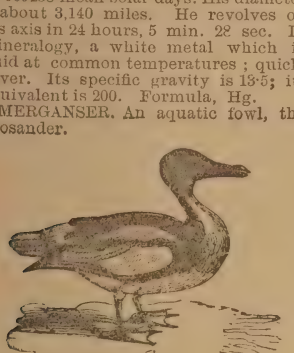
MERCER. One who deals in wrought silks. The mercers' company in London was incorporated in 1393

MERCHANT. In England, one that exports and imports merchandise. In the U. S., the term is applied to large dealers generally

MERCURY. In mythology, the god of eloquence and trade, and the messenger of the gods.

MERCURY. In astronomy, the planet nearest the sun, from which he is distant about 36,000,000 miles. His mean sidereal revolution is performed in 78·969258 mean solar days. His diameter is about 3,140 miles. He revolves on his axis in 24 hours, 5 min. 28 sec. In mineralogy, a white metal which is fluid at common temperatures; quicksilver. Its specific gravity is 13·5; its equivalent is 200. Formula, Hg.

MERGANSER. An aquatic fowl, the goosander.



MERIDIAN. In astronomy and geography, an imaginary great circle of the sphere, passing through the earth's axis and the zenith of the spectator, dividing the spere into two hemispheres, eastern and western, and crossing the equinoctial at right angles. In geography, the meridians are as numerous as the places on the earth, and the first meridian is that from which the reckoning commences. This is fixed differently by different nations, the capital of each country being mostly chosen as the first meridian for their respective globes. Meridional distance is the difference of the longitude between the meridian under which the ship is at present, and any other she was under before.

MESMERISM. Another term for animal magnetism; an agent (as taught by its advocates) by which one person can communicate certain influences at will to the mind of the person mesmerized, or put into a state of sleep, in which questions are answered. Mesmerization, is the act of producing the mesmeric state.

MESOZOIC. In geology, an epithet applied to the middle period of the earth's crust as relates to animal remains.

METAGENESIS. In zoology, the changes of form which the representative of a species undergoes in passing from an imperfect to a more perfect state.

METAL. An undecompounded body of peculiar lustre, insoluble in water, fusible by heat, and capable, in the state of an oxide, of uniting with acids, and forming with them metallic salts. Metals are distinguished, in different degrees, by malleability, ductility, fusibility, tenacity, elasticity, and crystalline texture. Gold, silver, iron, copper, mercury, lead, and tin were known to the ancients from the earliest periods. Gold and silver were called noble metals; the rest base metals.

Metals are distinguished into different classes, which have been thus arranged by Hoblyn:—1. Metallic bases of the alkalies, viz., potassium, sodium, and lithium. The oxides are termed alkalies, and the metallic bases alkaline or alkaligenous metals. 2. Metallic bases of the alkaline earths, viz, barium, strontium, calcium, and magnesium, and their oxides are termed alkaline earths. 3. Metallic bases of the earths, viz., aluminium, zirconium, glucinium, silicium, yttrium, and thorium. 4. Metals yielding oxides, which are neutral salifiable bases, viz., gold, silver, mercury, copper, lead, iron, tin, platinum, palladium, nickel, cadmium, zinc, bismuth, antimony, cobalt, and manganese. 5. Metals which are acidifiable by combination with oxygen, viz., tellurium, arsenic, chromium, molybdenum, tungsten, columbium, and selenium. 6. Metals magnetic, viz., iron, nickel, and cobalt. Metals are termed native when found in an uncombined form; mineralized, when combined with other bodies; compounds of two or more metals, except mercury, are called alloys, and possess the characteristic properties of pure metals; those of mercury with other metals are called amalgams. Metals are the best reflectors of caloric, and the worst radiators.

METAPHYSICS. The philosophy of mind, as distinguished from that of matter; a speculative science, which soars beyond the bounds of actual experience. The science has been divided into six parts—ontology, cosmology, anthropophosy, psychology, pneumatology, and metaphysical theology.

METEOR. A general term for the phenomena of the atmosphere, but particu-

larly for such sudden and luminous appearances as are occasionally visible, such as fireballs or luminous bodies of considerable magnitude, that are frequently to be seen in the tropical climates; shooting or falling stars, that are of common occurrence; and the ignis fatuus, seen in marshes.

METEORIC STONES. Heavy, stony bodies, that are supposed to fall from the fireballs after they have exploded. These stones, which are looked upon by some as concretions formed in the atmosphere, are by a chymical analysis found to contain silica, oxide of iron, magnesia, sulphur, lime and oxide of nickel.

METEOROLOGY. The doctrine of meteors in general, or the study of the variable phenomena of the atmosphere. The changes to which the atmosphere is most subject are such as respect its temperature, weight, moisture, and electricity, which are marked and measured by the barometer, thermometer, hygrometer, and electrometer. The results of these changes are winds, rains, snow, heats, colds, dews, &c. The intensity of the winds is measured by the aerometer, and the quantity of rain is measured by the pluviometer or rain-gauge.

METER, or Coal-Meter. A measurer of coals

METONIC CYCLE, OR METONIC YEAR. A period of nineteen years in which the lunations of the moon return to the same days of the month.

METRIC SYSTEM. The system of weights and measures first adopted in France, the important points in which are—1. that it is a decimal system; 2. that the units of length, superficies, solidity, and weight are correlated.

METROGRAPH. An apparatus on a railway-engine to indicate the speed at which the train is traveling, and time of arrival and departure at each station.

METROLOGY. Science of weights and measures, or a treatise on them.

METONYMY (in Rhetoric). A figure of speech, whereby one thing is put for another, as the cause for the effect, the part for the whole, and the like.

METRE (in Poetry). A system of feet composing a verse; as pentameter, a verse of five feet, hexameter, a verse of six feet, &c.

METRE (in Commerce). A French measure, equal to rather more than thirty-nine inches.

METROPOLIS. The chief city of a kingdom or province.

METROPOLITAN. A bishop of the mother church; an archbishop, who is bishop of the metropolis

MEZZOTINTO. A particular kind of engraving, so called from its resemblance to drawings in India ink. This is performed by punching the copper plates with the grounding tool, scraping them with the scraper, and then rubbing them with the burnisher or smooth piece of steel, to produce the effect desired

MICROPHONE. An instrument for magnifying weak sounds. In its best form it consists of a stick of gas-carbon placed vertically and supported loosely between two small blocks of carbon fastened to a piece of thin board. When an electric current passes through the carbon, an ordinary telephone being in circuit, the slightest jar, and even the vibrations of the voice, is sufficient to interrupt the contact on the surfaces.

MICROSCOPE. An optical instrument which magnifies objects, so that the smallest may be distinctly seen and described. The invention of microscopes, like many other ingenious discoveries, has been claimed for different authors. Huygens informs us that Drebell, a Dutchman, constructed the first microscope in 1621; but Borelli states, in a letter to his brother that when he was ambassador in England in 1619, Cornelius Drebell showed him a microscope, which he said was given him by the archduke Albert, and had been made by Jansen, whom he considers to have been the real inventor, although F Fontana, a Neapolitan, claimed, in 1646, the honour of the invention to himself, and dated it from the year 1618.

MIDRIFF, or Diaphragm (in Anatomy). A membrane which divides the trunk of the body into the thorax and abdomen, the upper and lower cavity.

MIDSHIPMAN. An officer in the navy, who assists on all occasions, both in stowing and rummaging the hold, sailing the ship, &c

MIDSUMMER. The summer solstice. The 24th of June is the Midsummer Day, which is also quarter day

MIDWIFERY. The art of assisting women in childbirth.

MILE. A long measure, which, in England, contains 8 furlongs, or 1760 yards, or 5280 feet.

MILIARY GLANDS. The small and infinitely numerous glands, which secrete the perspiration.

MILITARY. A name for the whole body of soldiery, with their equipments, &c.

MILITARY. An epithet for what belongs to soldiers, as Military Architecture, Military Exercises, &c.

MILITARY ARCHITECTURE. See Fortification

MILITARY EXECUTION Ravaging a country that refuses to pay the contribution levied upon it; also the punishment inflicted by the sentence of a court-martial.

MILITARY ROAD or WAY. A road made for the passage of armies, like those constructed by the Romans in Britain

MILITIA. A military force raised for the permanent defence of a country.

MILK. A fluid which serves for the nourishment of young animals. It is secreted by particular glands in the female of all animals which suckle their young, which, on that account, are denominated mammalia. The constituent parts of cows' milk, procured by chemical analysis, are, aroma, an odorous, volatile principle; water, which forms a considerable part; bland oil, from which the cream is formed; curd, or animal gluten; sugar or the serum of milk; and some neutral salts. Human milk is the thinnest of all, and next to that, asses' milk, which is prescribed for consumptive persons.

MILK-THISTLE. A biennial, the leaves of which are eaten as a salad.

MILKY WAY, or Via Lactea (in Astronomy). A broad track or path encompassing the whole heavens, which is easily discernible, from its milky-white appearance.

MILL. A machine for grinding wheat, &c. of which there are different kinds, according to the different methods of putting them in motion, as watermills, windmills, horsemills, handmills, and also steammills. They are also distinguished according to the uses they serve, as cornmills, cottonmills, papermills, barkmills, &c. Corn is ground by two millstones placed one above the other without touching, the space between them being made greater or less, according as the miller would have the flour finer or coarser.

MILLENNIUM. A thousand years, generally taken for the thousand years of Christ's reign here on earth.

MILLET. A plant that bears an immense number of small grains. In Central Africa, it is the common food of the inhabitants

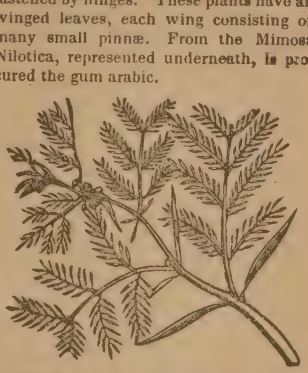
MILLING. The same as fulling.

MILLING. The stamping of coin by means of a mill. This is one part of the process in coining.

MILLION The number of ten hundred thousand.

MILLREA A Portuguese gold coin, equal to one dollar and five cents.

MIMOSA, or The Sensitive Plant, so called on account of the sensibility of its leaves. It is a numerous tribe of plants, which are all natives of warm climates. They have all the singular property that their leaves recede from the touch, and run rapidly together; in some, the footstalks and all are affected. The humble sensitives instantly fall downward, as a fastened by hinges. These plants have all winged leaves, each wing consisting of many small pinnæ. From the Mimosa Nilotica, represented underneath, is procured the gum arabic.



MINE. A deep hollow, running unde ground, whence various minerals, particularly the metallic kind, are dug out These mines are mostly dug through various strata or beds of substances, of which the interior of the earth is composed. In these strata are found innumerable fissures, called by the miners lodes, which contain the metal sought for. The passage or descent to the mine is by means of a pit called a shaft. The principal signs, by which metallic veins are discovered, are mineral waters, pieces of ore found on the surface of the ground, warm exhalations, metallic sands, &c.

MINE (in Fortification) A subterranean passage dug under the wall or rampart of a fortification, for the purpose of blowing it up by gunpowder. The place where the powder is lodged is called the chamber.

MINER. One who digs mines or works in mines.

MINERALOGY That science which treats of the solid and hard component parts of the earth Minerals have been variously classed by different writers. The system of Werner comprehends them under the four classes of earths, salts, inflammables, and metals. To this Linnæus has added a fifth class of petrifactions.

MINERAL WATERS. Springs impregnated with mineral substances.

MINERVA. The daughter of Jupiter and goddess of wisdom and the fine arts

She is commonly represented with all the emblems of war, as the helmet, spear, and shield.

MINERVALIA. Presents among the ancients, made by the boys to their masters before the feast of Minerva.

MINIATURE. A delicate kind of painting, consisting of little points or dots instead of lines, commonly done on ivory, and used in taking portraits; also the portrait itself.

MINIM (in Music) A measure of time marked thus, 𝅗𝅥, equal to two crotchets.

MINIMUM (in Mathematics) The least quantity attainable in a given case

MINISTER OF STATE. In England, one who conducts the affairs of state by an authority from the king

MINISTER, FOREIGN. A person sent into a foreign country, to manage the affairs of the state by which he is sent.

MINIUM, or RED LEAD. An oxide of lead, procured by exposing this metal to a great heat and a free access of air.

MINK. An animal of the weasel kind, common in North America, that frequents the banks of streams.

MINOR (in Law). An heir, male or female, within the age of twenty-one

MINORITY (in Law). A state of nonage; also the smaller number of persons who give their votes on any questions.

MINSTREL. A player on any musical instrument; an itinerant performer

MINT (in Botany). A pot-herb, which has a creeping root and a strong aromatic scent.

MINT. The place where coin is made.

MINUTE (in Geometry, marked thus(′) The sixtieth part of the degree of a circle; also the sixtieth part of an hour.

MIRACLES. Works effected in a manner different from the ordinary course of nature, by the immediate power of the Almighty, for some particular purpose.

MIRROR. The surface of any opaque body polished, and adapted to reflect the rays of light which fall upon it, and to represent objects. Mirrors are either flat, as looking-glasses; concave, for the purpose of converging the rays of light; or convex, for the purpose of diverging the rays of light.

MISADVENTURE (in Law). A sort of homicide against the mind of the killer, partly by negligence and partly by chance

MISCELLANEÆ. One of Linnæus's natural orders of plants, comprehending such as were not included in the other orders

MISCHIEF (in Law) Damage or injury done to the property of another, not for gain, but with a malicious intent.

MISDEMEANOUR. An offence less than felony.

MISLETOE. A plant which always grows on trees, and was thought, therefore, to be an excrescence of the tree; but it has been found to be propagated by the seed or berry which is conveyed by the mistletoe thrush from one tree to another: this bird being fond of these seeds, it sometimes happens that the viscous part of the berry sticks to his beak, and, in his attempts to disengage himself from it by striking his beak against the bark of the tree, the berry sticks to the latter; and if it happen to light on a smooth part, it will take root, and sprout out the next winter This plant adheres most readily to the ash and other smooth-rinded trees, as the apple, &c.

MISNAH The code or collection of the civil law of the Jews

MISNOMER (in Law). The giving a person a wrong name.

MISPRISION. In general, a neglect, as misprision of treason, a neglect to reveal treason, which was formerly high treason in England.

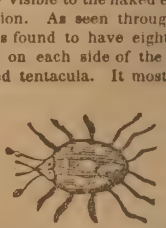
MISSAL. The book of the Romish ceremonies.

MISSILE. Any weapon thrown or discharged from a machine, as stones from a sling

MISSIONARIES. Ministers sent into any country to preach Christianity.

MISTS. Vapours hovering over the earth, which are either drawn upwards by the rays of the sun, or fall down by their own weight in the shape of dew, or, in cold weather, in that of hoar frost.

MITE. One of the smallest insects, that is scarcely visible to the naked eye, except by its motion. As seen through a microscope, it is found to have eight legs, two eyes, one on each side of the head, and two jointed tentacula. It mostly lives in cheeses



MITE (in Commerce). A small coin formerly current, equal to about one third part of a farthing; also a weight among the moneyers, equal to the twentieth part of a grain.

MITRE (among Carpenters). An angle just 45 degrees, or half a right angle

**MITRE** A sacerdotal ornament worn on the head by bishops on solemn occasions; it is a cap of a conical form

MIZEN. See MAST

MNEMONICS. Precepts, rules, and common-places, to help the memory

MOAT (in Fortification). A deep trench dug round the ramparts of a fortified place.

MOCKING-BIRD. A sort of American thrush, which has the faculty of imitating the notes of other birds. This bird is so perfect an imitator, that it will catch parts of tunes from a flute, and repeat them with great sweetness and accuracy. It seldom migrates farther north than Pennsylvania

MODE (in Music). A regular disposition of the tune in relation to certain principal sounds, which are called the essential chords of the bass.

MODEL. An original pattern, or the shape or design of any thing in miniature; particularly applied to an artificial pattern made in wood, stone, plaster, or other matter, with all its parts and proportions, in order to give a full idea of the work that is to be executed.

MODERNS. A name given generally to those who have distinguished themselves since the revival of learning, as compared with the ancients, and also with those of the middle ages

MODULE (in Architecture). A certain measure by which the proportions of columns are regulated.

MODUS DECIMANDI. In England, something paid as a compensation for tithes, on the principle of a moderate equivalent.

MOHAIR. The hair of a kind of goat at Angora in Turkey, of which the natives make cambiets

MOIDORE. A Portuguese coin, equal to $6,50

MOLASSES The gross fluid matter that remains of sugar after boiling; the scum of the sugar-cane.

MOLE (among Mariners). A long pier or artificial bulwark of masonry, extending obliquely across a harbour

**MOLE** An animal that lives under ground, and, on account of the smallness of its eyes, was formerly supposed to be blind

MOLLUSCA An order of animals under the class vermes in the Linnæan system, comprehending naked simple animals not included in a shell, but furnished with limbs, as the snail, star-fish, cuttle-fish, sea-urchin, &c

MOLTING The changing of feathers, hair, or horns, in birds and beasts.

MOLYBDATES Salts formed from molybdic acid in combination with earths, alkalies, &c.

MOLYBDENUM. A metal which exists, mineralized by sulphur, in the ore called the ore of Molybdena Molybdenum has hitherto been obtained only in small globules.

MOMENTUM The quantity of motion in a moving body.

MONADELPHIA (in Botany). One of the Linnæan classes, consisting of plants in which all the stamens are united below into one cylindrical body

MONANDRIA (in Botany) One of the Linnæan classes, consisting of plants that have only one stamen

MONARCHY. A government in which the supreme power is vested in one person

MONASTERY. A college of monks or nuns; a house of religious retirement.

MONDAY. The second day of the week.

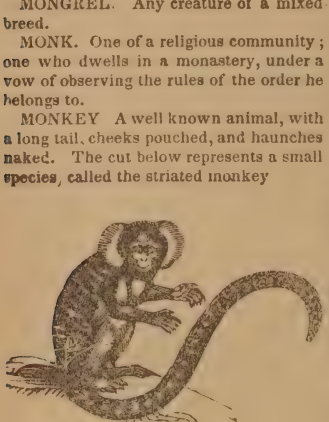
MONEY. Whatever is made the medium of trade for determining the value of commodities in buying or selling. It consists either of coins, or pieces of stamped metal, or of paper money or moneys of account. Paper money is called paper currency, to distinguish it from specie, metallic currency, or cash: it comprehends notes of hand, bills of exchange, bonds, mortgages &c. Moneys of account are imaginary moneys, used only in keeping accounts; such was the English pound until sovereigns were coined.

MONEYERS. In England, officers in the king's mint, who make and coin the money.

MONGREL. Any creature of a mixed breed.

MONK. One of a religious community; one who dwells in a monastery, under a vow of observing the rules of the order he belongs to.

MONKEY A well known animal, with a long tail, cheeks pouched, and haunches naked. The cut below represents a small species, called the striated monkey



MONKEY (in Military Affairs). A machine used for driving large piles of wood.

MONKSHOOD, or Aconite. A poisonous plant bearing a fine blue flower.

MONOCEROS One of the new constellations in the northern hemisphere.

MONOCHORD. A musical instrument with one string.

MONODY. A funeral ditty.

MONOGYNIA (in Botany). An order in the Linnæan system, comprehending plants that have only one pistil or stigma in a flower

MONOECIA (in Botany). One of the Linnæan classes, including plants that have male and female flowers on the same plant, as the plane-tree, hazel, chestnut, cucumber, &c

MONOLOGUE. A soliloquy, or scene where one only speaks.

MONOPETALOUS. One-petalled, applied to flowers the corolla of which consists of one petal only.

MONOTREMES. In zoology, a family of edentate Mammalia, with one external aperture for the passage of the semen, urine, and other excrements. It consists of two genera, the Echidna and Ornithorhynchus.

MONOSYLLABLE A word of one syllable.

MONOTONY. Sameness in the tone of the voice; a fault in elocution or delivery

MONSOONS, or Trade-Winds. Periodical winds in the Indian sea, that blow one half the year one way, and the other half on the opposite points. These points and times of shifting are different in different parts of the ocean.

MONTH (in Chronology). The twelfth part of a year, otherwise called a calendar month, to distinguish it from the astronomical month, which is either solar or lunar A solar month, or the time in which the sun passes through a whole sign of the zodiac, is 30 days 16 hours 29 minutes 5 seconds; a lunar month, or the period of one lunation, is 29 days 12 hours 44 minutes.

MOOD (in Grammar). The manner of forming a verb, or the manner of the verb's inflections, so as to express the different forms and manners of the action, or the different intentions of the speaker; as the indicative mood, which declares a thing: the imperative mood, by which one commands; the subjunctive mood, which implies a conditional action; the potential mood, which denotes the possibility of doing the thing; and the infinitive mood, which expresses the action indefinitely.

MOON. One of the secondary planets, and a satellite to the earth, marked thus ☾. It is in diameter 2144 miles, and fifty times less than the earth. The surface of the moon is diversified with mountains and valleys. Her sidereal or periodical motion on her own axis she performs in 27 days 7 hours 43 minutes and 11 seconds; her

synodical motion, or her motion in her orbit round the earth she performs in 29 days 12 hours 44 minutes 12 seconds: the former is called the periodical, and the latter the synodical month.

MOONSTONE. A pure kind of feldspar, found in Ceylon and Switzerland.

MOOR-COCK. A bird of the grouse tribe, inhabiting the heaths of Scotland and the north of England.

MOOR-HEN. A water-fowl of the coot tribe

MOORING. Laying out the anchors for the secure riding of the ship

MOOSE. See Elk.

MORAVIANS, or Hernhutters. A sect of professing Christians, who prevail in Germany, and are distinguished both by the singularity of their doctrine and their manners.

MORDANTS (in Dyeing). Substances combined with the vegetable or animal fibre, in order to fix the dye-stuff.

MOROCCO. A fine kind of leather prepared from the skin of an animal of the goat kind, and imported from the Levant.

MOROXYLIC ACID. An acid procured from the white mulberry

MORSE. A species of sea animal of the seal kind, of which there are several varieties inhabiting the northern seas. The most remarkable of these is the walrus, or great morse.

MORTALITY, Bills of. See Bills.

MORTAR. A thick, short cannon, having a large bore, and mounted on a low strong carriage, which serves for throwing bombs, &c

MORTAR (with Apothecaries). A strong vessel for pounding things in with a pestle.

MORTAR (among Masons). Lime, sand, and hair mixed together, so as to make a cement.

MORTGAGE (in Law). A dead pledge, or a pawn of lands and tenements, or any thing immovable, given on condition that it should be the creditor's for ever, if the money be not paid on the day appointed.

MORTISE, or MORTOIS (among Carpenters). A kind of joint consisting of a hole of a certain depth cut in a piece of timber so as to receive another piece called the tenon.

MORTMAIN. In England, an alienation of lands and tenements to any guild, corporation, or fraternity, and their successors, which may not be done without the king's license

MOSAIC, or Mosaic Work. An assemblage of little pieces of glass, marble, precious stones, &c., of various colours, cut square and cemented on a ground of stucco in imitation of painting.

MOSQUE. A temple or place of religious worship among the Mahometans The church of St. Sophia at Constantinople is converted into a Turkish mosque.

MOSQUITO. A large kind of gnat in warm climates, which inflicts deep wounds on those whom it attacks.

MOSS. A parasitic plant, something like down, that adheres to the trunks of trees, and was formerly supposed to be merely an excrescence, but is now found to be a perfect plant, having roots, flower, and seeds, yet cannot be propagated by seed. It is oftentimes very injurious to fruit trees, and ought to be scraped off in the spring season and in moist weather.

MOTH. An insect something similar to the butterfly, but not so large. It is very injurious to cloth and furniture

MOTHER. The mouldy lees of wine, beer, &c.

MOTHER OF PEARL. The shell of pearl fish.

MOTION (in Physiology). A change of place, which is absolute if it be independent of any other body, and relative if it changes the relative place of a moving body, as in the case of two vessels sailing in the same or contrary directions with different velocities. Animal motion is that by which the situation, figure, magnitude of the parts of animals is changed, which takes place in the act of their growth.

MOTION (in Law). An application in court, either by the parties themselves or their counsel, in order to obtain some order or rule of court.

MOTION (in Congress or any other public assembly). The proposing of any matter for the consideration of those present.

MOTTO. A word or short sentence, put to an emblem or device, or to a coat of arms in a scroll, at the bottom of the escutcheon

MOVABLES. Personal goods.

MOVEMENT (in Military Affairs). The regular, orderly motion of an army, for some particular purpose.

MOVEMENT (in Music). The progress of sounds from grave to acute, or from acute to grave.

MOVEMENT (among Watchmakers). A name for the inner works of a watch, &c., that move.

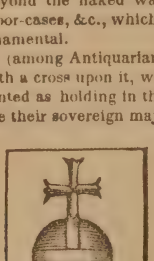
MOULD (in Horticulture). Earth mixed with dung, &c., fit for the reception of seeds.

MOULD (among Mechanics). A form or frame in which any thing is cast, as glaziers' moulds, tallowchandlers' moulds, and the like.

MOULDINESS. A term applied to bodies, as bread, &c., which are in a state of corruption, from the action of the damp or air. This shows itself by a white down, which, when seen through a microscope, appears, like the moss, to be a kind of plants, although some have imagined it to look like animalculæ.

MOULDINGS (in Architecture). Projectures beyond the naked wall, such as cornices, door-cases, &c., which are cut so as to be ornamental.

MOUND (among Antiquarians) A ball or globe with a cross upon it, which kings are represented as holding in their hands, to designate their sovereign majesty



MOUND (in Fortification). Any thing raised, as a bank of earth, &c., to fortify or defend a place.

MOUNT An artificial elevation of earth.

MOUNTAIN ASH. An ornamental tree, which in its leaf resembles the common ash; but it bears a clustered flower, that is succeeded by a beautiful red berry.

MOUNTAINS. Extraordinary elevations of the earth, such as the Alps and Pyrenees in Europe, the Caucasus and Uralian mountains in Asia, and the Andes in America. Mountains mostly consist of stone

MOUNTING (in Military Affairs) Going upon some arduous or specific duty, as mounting a breach, that is, running up to it; mounting the trenches, going upon duty in the trenches, &c.; but mounting a cannon is setting it on its carriage.

MOUSE. A little animal that haunts houses and fields. It is nearly allied to the rat, and is classed with it under the name of Mus in the Linnæan system Field mice are frequently white.

MOUSE-EAR. A plant very similar to chickweed; but the flower is larger, and the fruit shaped like an ox's horn, gaping at the top.

MOUTH. The aperture in the head of any animal at which the food is received, and by which the inspiration and expiration of the air is performed; also the aperture of many other things, so called from the similarity of situation or use, as the mouth of a cannon, where the powder and ball go in and out; the mouth of a river, where the water passes in and out; and the mouth of a vessel, &c.

M. P An abbreviation for Member of Parliament.

MS. An abbreviation for Manuscript.

MSS. An abbreviation for Manuscripts

MUCILAGE. A slimy substance of sufficient consistence to hold together, as a solution of gum or any tenacious liquid, or a viscous extraction from roots and other parts of vegetables.

MUCUS. A viscous fluid secreted by certain glands in the body.

MUFFLE. A small earthen oven used for cupellation.

MUFTI. The chief priest among the Mussulmen, appointed by the grand seignior himself. He is the oracle in all doubtful questions of their law.

MULATTO. Any one born of a black man and white woman, and vice versa.

MULBERRY TREE. A large, spreading tree, the fruit of which resembles the raspberry in its seedy make, but is much larger. The white mulberry is cultivated in France, Italy, and the United States, for its leaves, to feed silkworms, but the Persians make use of the common black mulberry for this purpose.

MULE. A mongrel kind of quadruped generated between an ass and a mare

and sometimes between a horse and a she-ass Mules are hardy, sure-footed animals, used much in mountainous countries, as about the Alps and Pyrenees; but they are incapable of propagating their species.

MULE (in Botany). Any flower or fruit produced from two sorts.

MULETEER. A driver of mules.

MULLET. A fish with a head almost square, and a silvery body.

MULTIPLE. A number which includes another a certain number of times, as 6, the multiple of 2.

MULTIPLICATION One of the four simple rules of arithmetic, which consists in the increasing of any one number by another as often as there are units in that number by which the one is increased. The number multiplying is the multiplier; the number multiplied, the multiplicand; and the result of the operation is the product.

MULTIPLYING-GLASS. A glass otherwise called a polyhedron, being ground into several planes that make angles with each other, and cause objects to appear increased in number.

MULTUM IN PARVO Much in a small compass

MUM. A kind of liquor made of wheat, and brought from Brunswick in Germany.

MUMMIES. The name of dead bodies which have been preserved for ages from corruption in Egypt, by a particular method of embalming; also the liquor running from such mummies, which approaches more or less to a state of solidity

MUNDIC. A sort of copper ore; a sulphuret of copper of a greenish yellow colour.

MUNICIPAL (in the Civil Law). An epithet signifying 'invested with the civil rights of a citizen;' with us, it is an epithet for what belongs to a town or city, as municipal laws, laws enjoyed by the inhabitants of a free town or city and in an extended sense, municipal law is the law by which any particular state or country is governed.

MURAL CROWN. A crown among the Romans, given to him who first scaled the walls of a city

MURDER (in Law). The wilful an felonious killing a man with malice prepense.

MUREX A shell-fish noted among the ancients for its purple dye; in the Linnæan system, it is a genus of insects under the class vermes, the animal of which is a limax: the shell is univalve and spiral.

MURIATES. Salts formed from muriatic acid with certain bases, as the muriate of ammonia, of soda, &c.

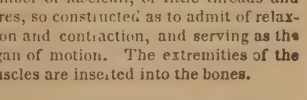
MURIATIC ACID (otherwise called Spirit of Salt). An acid procured from salt, consisting of hydrogen combined with chlorine gas. Its odour is pungent, and its taste acid and corrosive. If an inflamed taper be immersed in it, it is instantly extinguished: it is also destructive of human life.

MURRAIN. A wasting, contagious disorder among cattle

MUS (in Zoology) A generic term, in the Linnæan system, for a tribe of animals of the class mammalia, and order glires, distinguished principally by their teeth. The most remarkable species are the common rat and mouse, the musk rat, the Norway rat, &c

MUSCI. Mosses; one of the families into which Linnæus has divided the vegetable kingdom. It is of the class cryptogamia, and comprehends a vast variety of species, as the earth-moss, bristle-moss, spring-moss, water-moss, &c.

MUSCLE (in Anatomy). A fleshy, fibrous part of the body, consisting of a bundle of thin, parallel plates, divided into a great number of fasciculi, or little threads and fibres, so constructed as to admit of relaxation and contraction, and serving as the organ of motion. The extremities of the muscles are inserted into the bones.

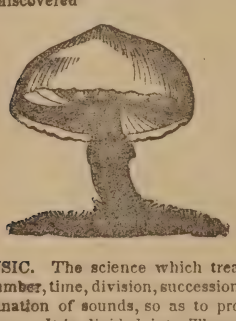


MUSES (in the Heathen Mythology) Divinities supposed to preside over the

arts and sciences. They were nine in number, namely, Clio, to whom they attributed the invention of history; Melpomene, the inventor of tragedy; Thalia, of comedy; Euterpe, of the use of the flute; Terpsichore, of the harp; Erato, of the lyre and lute; Calliope, of heroic verse; Urania, of astrology; Polyhymnia, of rhetoric. Herodotus divided his history into nine books, to each of which he gave the name of one of the muses.

MUSEUM. A collection of rare and interesting objects, particularly in the departments of Natural History; also the place where the collection is deposited. The term was originally applied to a study, or a place set apart for learned men, in the royal palace of Alexandria, by Ptolemy Philadelphus, who founded a college, and gave salaries to the several members, adding also an extensive library, which was one of the most celebrated in the world.

MUSHROOM. A plant, the generic name of which, in the Linnæan system, is agaricus. It is a spongy substance which grows up to its bulk on a sudden. The seeds of mushrooms have not long been discovered



MUSIC. The science which treats of the number, time, division, succession, and combination of sounds, so as to produce harmony. It is divided into Theoretical Music, which inquires into the properties of concords and discords, and explains their combinations and proportions for the production of melody and harmony; and Practical Music, which is the art of applying the theory of music in the composition of all sorts of tunes and airs.

MUSIC, History of. The first traces of music are to be found in Egypt, where musical instruments, capable of much variety and expression, existed at a time when other nations were in an uncivilized state. The invention of the lyre is by them ascribed to Hermes Trismegistus, the Mercury of the Egyptians, which is a proof of its antiquity; but a still greater proof of the existence of musical instruments amongst them at a very early period is drawn from the figure of an instrument said to be represented on an obelisk, erected, as is supposed, by Sesostris at Heliopolis. This instrument, by means of its neck, was capable, with only two strings, if tuned fourths, of furnishing that series of sounds called by the ancients a heptachord, and if tuned fifths, of producing an octave. As Moses was skilled in all the learning of the Egyptians, it is probable that the Israelites, who interwove music in all their religious ceremonies, borrowed much from that people. That the Greeks took their first ideas of music from the Egyptians is clear from this: that they ascribed the invention of the lyre to Mercury, although they made Apollo to be the god of music, and gave him that instrument to play upon. In no country was music so much cultivated as in Greece. The muses, as well as Apollo Bacchus, and other gods and demigods, practised or promoted it in some way or other. Their poets are supposed to have been like the Celtic and German bards, and the scalds of Iceland and Scandinavia, who went about singing their poems in the streets, and the palaces of princes. In this manner did Orpheus, Homer, Hesiod, Sappho, and others recite their verses; and in after times, on the institution of the games, Simonides, Pindar, and other poets celebrated in public the exploits of the victors. The instruments known in the time of Homer were the lyre, flute, syrinx, and trumpet. The invention of notation and musical characters is ascribed to Terpander, a poet and musician, who flourished 671 years before Christ We afterwards find philosophers, as well as poets, among the number of those who admired and cultivated music, theoretically as well as practically, as Pythagoras, Plato, Aristotle, Aristoxenus, Euclid, and many others. Pythagoras is celebrated for his discoveries in this science; namely, for that of musical ratios, and the addition of an eighth string to the lyre. The former of these he is supposed to have derived from the Egyptians. He also explained the theory of sounds, and reduced it to a science. Aristoxenus is the most ancient writer on music of whose works there are any remains. Euclid followed up the idea of Pythagoras' ratios, which he reduced to mathematical demonstration. To this list of Greek writers may be added Nichomachus Gerasenus, Alypius, Gaudentius, Bacchius senior, Ptolemy the astronomer, and Aristides Quintilian whose works are still extant. These wrote under the Roman emperors, many of whom cultiva-

ted music and followed the theory of the Greeks. Among the Roman writers may be reckoned Vitruvius, who, in his architecture, touches lightly on this subject; also Martianus Capella and Boethius, who wrote on the decline of the empire. After them some centuries elapsed before the science of music met with any particular attention. Its introduction into the church service prevented it from falling, like other arts, into total neglect. Instrumental music was introduced into the public service of the church under Constantine the Great. The practice of chanting the psalms was begun in the western churches by St. Ambrose, about 350 years after Christ; three hundred years after, the method of chanting was improved by St. Gregory the Great. It was probably introduced into England by St. Augustine, and greatly improved by St Dunstan. The use of the organ probably commenced in the Greek church, were it was called hydraulicon, or the water-organ. The first organ known in Europe was sent as a present to King Pepin from the emperor Constantine Copronymus. It came into general use in France, Germany, and England, in the tenth century. Soon after this, music began again to be cultivated as a science, particularly in Italy, where Guido, a monk of Arezzo, first conceived the idea of counterpoint, or the division of music into parts by points set opposite to each other, and formed the scale afterwards known by the name of the gamut. This was followed by the invention of the time-table, and afterwards by regular compositions of music. But the exercise of the art was for a long time confined to sacred music, during which period secular music was followed by itinerant poets and musicians, after the manner of the ancients. Of this description were the troubadours in France, the Welsh bards or harpers in England, and the Scotch minstrels.

MUSICIAN. A professor of, and practitioner in music; one who performs on any musical instrument The musicians in London form one of the city companies.

MUSK An oily, friable brownish substance, generated in the body of the musk, of the most powerful and penetrating smell, which is used as a perfume. It is partially soluble in water, which receives its smell, and also in alcohol, to which, however, it does not communicate its odour.

MUSK. A quadruped, in size and figure resembling a small roebuck It is a native of Thibet and other parts of Asia, and is remarkable for having an oval bag in the lower part of its belly, containing a perfume called musk

MUSK-APPLE and MUSK-PEAR A sort of apple and pear having the perfume of musk; also other plants or flowers, so called from their having the same perfume, as the musk cranesbill, and the musk ochra, a West Indian plant.

MUSKET. A commodious sort of fire-arms used by soldiers. The regular length of a musket is 3 feet 8 inches from the muzzle to the pan.

MUSKET-SHOT. The distance that a musket will carry, which is about 120 fathoms.

MUSK-OX. An animal with short legs, and long hair, that resembles the Bison, and inhabits the frigid regions of North America.

MUSK-RAT. An animal of the beaver kind, which yields an oily fluid, having the perfume of musk. Its fur is valuable.

MUSK-ROSE. A sort of rose, from which a highly odorous oil is extracted at Tunis

MUSLIN. A fine sort of cotton cloth.

MUSQUETEERS. Soldiers armed with muskets.

MUSSEL. A testaceous animal found lodged in limestone, or in deep beds under water

MUSSULMAN, or Moslem, i. e Faithful. The name assumed by Mahometans

MUST. The newly pressed juice of the grape, which, by a chemical analysis, is found to contain water, sugar, jelly, gluten, and bitartrate of potash

MUSTER. A review of soldiers under arms.

MUSTER-ROLL. A specific list of the officers and men in every regiment, troop, or company.

MUTATIS MUTANDIS. Things being changed as they ought to be.

MUTE (in Law). Not answering directly to the arraignment, on an indictment for felony A prisoner is said to stand mute

when he will not put himself upon the inquest.

MUTE (in Mineralogy). An epithet for minerals which do not ring when they are struck.

MUTES (in Grammar). Letters which cannot form a sound without a vowel after them, as b, c, d, g, k, p, q, t.

MUTES (in the Grand Seignior's Seraglio). Dumb officers, who are sent to strangle, with the bow-string, bashaws or other persons who fall under the sultan's displeasure.

MUTES (among Undertakers). Those men who are employed to stand at the door of the deceased, until the body is carried out.

MUTINY. A revolting from lawful authority, particularly among soldiers and sailors.

MYRMELEON. A genus of insects in the Linnæan system, one species of which is remarkable on account of its larva, which has the property of preparing a sort of pitfall for the ensnaring of other insects

MYRRH. A resinous concrete juice procured from a tree growing in Arabia and Abyssinia. The sort of tree which yields this substance is not exactly known, but, according to Bruce, it is a sort of mimosa. Myrrh is in the form of tears, brittle, of an aromatic taste, not melting when heated, and burning with difficulty; yields oil by distillation, and forms a yellow solution with water.

MYRTLE. A fragrant shrub, which, among the ancients, was sacred to Venus The common myrtle is a native of Asia, Africa, and Europe.

MYRTUS. The generic name of the myrtle in the Linnæan system; includes also among its species the pimento or allspice tree.

MYTHOLOGY The fabulous history of the heathen deities and heroes, and divine honours paid to them

## N.

N, the thirteenth letter of the alphabet, stood as a numeral for 900, and, with a dash over it, thus, $\bar{N}$, 9000. N. or No. stands as an abbreviation for numero, number; also for north, note, noun, &c.

NABOB, or NAVOUB. An Indian word for a deputy; a title of dignity and power applied to those who act under the soubahs or viceroys.

NABONASSAR. First king of Babylon, in whose reign, according to Ptolemy, astronomical observations were made; whence an æra was formed from this king's reign, called the æra of Nabonassar, dated 747 years before Christ.

NADIR (in Astronomy). That point in the heavens opposite to the zenith, and directly under our feet, or a point in a right line, supposed to be drawn from our feet through the centre of the earth, and terminating in the lower hemisphere.

NAIL (in Anatomy). The horny lamina on the extremity of the fingers and toes.

NAIL (with Ironmongers). Spikes of iron and brass, having heads, and fitted for binding several pieces of wood together.

NAIL (in Commerce). A measure of length, containing the sixteenth part of a yard.

NAKED. A term in Architecture, applied either to a column or a wall, to denote the face or plain surface from which the projections take their rise

NANKIN A well known stuff, so called from Nanking, a city in China.

NAPE. The hinder part of the neck.

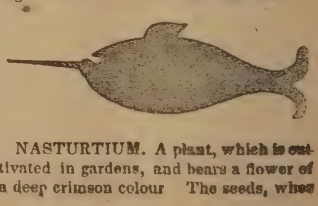
NAPHTHA. A native combustible liquid, and one of the thinnest of the liquid bitumens issuing from the earth, and found on the borders of springs on the shores of the Caspian Sea, and many other places. It feels greasy, has a bituminous smell, takes fire on the approach of flame, and is so light as to float on the water.

NARCISSUS. A genus of plants, which is cultivated in gardens on account of its sweet-smelling flowers, which are either yellow or white.

NARCOTICS (in Medicine). Soporiferous and stupifying medicines, as opium and its preparations.

NARROW. A small passage between two lands.

NARWAL. An animal of the whale tribe, remarkable for its single tooth standing out like the horn of the unicorn.



NASTURTIUM. A plant, which is cultivated in gardens, and bears a flower of a deep crimson colour The seeds, when

trusea, have a pungent smell that causes sneezing.

NATIONAL DEBT. Loans advanced to government, which constitute the funds or stocks, for which interest is paid from revenues set apart for the purpose.

NATRON. Native carbonate of soda.

NATURAL HISTORY. That branch of knowledge which treats of the characteristics or distinctive marks of each individual object, whether animal, vegetable, or mineral; as also of its peculiar habits, qualities, uses, &c.

NATURALIZATION (in Law). The admitting of an alien into the number of natural subjects.

NATURAL ORDERS (in Botany). A mode of classifying plants according to their natural or more obvious characteristics.

NATURAL PHILOSOPHY That branch of science which treats of the powers of nature, the properties of natural bodies, and their actions on one another, comprehending under it the several divisions of astronomy, chymistry, electricity, galvanism, hydraulics or hydrostatics, magnetism, mechanics, optics, pneumatics, &c.

NAVAL ARCHITECTURE. The science of ship-building, comprehending the theory of delineating marine vessels upon a plane surface, and the art of framing them upon the stocks according to the proportions exhibited in a regular design.

NAVAL ARCHITECTURE, History of. The first example of any construction fitted to be borne up by the waters is recorded in Scripture in the case of the ark built by Noah under the divine assistance and commands. As this was built by more than human aid, it is not surprising that we hear of no farther attempts at building vessels of any kind until the nation of the Egyptians was formed, who doubtless profited by those arts and sciences which, as is generally admitted, were practised before the flood, and transmitted by Noah and his family to his posterity. The Egyptians, we are told, constructed the barks which they used on the Nile of planks cut out of the acacia, or Egyptian thorn; the planks were nearly square, measuring about three feet each way, and, being lapped over each other like tiles, were fastened together with wooden pins. The joints and seams were carefully calked with the papyrus, and benches of the same material were formed for the rowers. As the necessity of some impelling and directing force in aid of human labour was soon felt, a rudder and a sail were quickly added. The sail, which was made of the papyrus, was fastened to a pole serving as a mast, which was made of the acantha As such vessels were incapable of stemming the current of the river when the wind was unfavourable, they used to be towed by persons on the bank, and when they went with the current, the Egyptians used to accelerate their motion by tying a hurdle of tamarisk to the prow of the vessel, and letting it down into the water, the stream acted on the hurdle more strongly than it would on the sides of the vessel, and thus increased the velocity of its motion very materially. In order to preserve a due balance between the head and the stern, which might otherwise have been destroyed by the action of the hurdle, they caused a stone of considerable magnitude, pierced through the middle, to be suspended by a rope from the stern, which enabled them to swim nearly with an even keel.

The first contrivance to supply the place of a commercial vessel is generally admitted to have been a kind of raft, or collection of trees fastened together with ropes, made from the bark. But as in a structure so rude they were altogether without the power of directing their course, they set about remedying this inconvenience, by putting a few thick planks to the depth of three or four feet in the water between the joists of the trees which composed the raft These, being raised or lowered at the pleasure of the pilot, served in some measure the purpose proposed. With no better contrivances than this, the Phœnicians are said to have visited the islands of Sicily, Corsica, and various other islands in the Mediterranean. It is also worthy of observation, that floats answering to the description of these were found in the south seas in the last century.

Although the Greeks were not remarkable for a spirit of commercial enterprise, yet the remains of antiquity furnish us with ample evidence of the advances which they made in the art of ship-building. They had vessels of different forms and sizes, distinguished, according to their use, into ships of passage, ships of burden, and ships of war. The latter were likewise designated triremes, quadremes, and quinquiremes, according to the number of banks of oars, which were raised in a sloping direction one above another. Those which had most banks were built highest, and rowed with the greatest strength The Greeks, in all probability, derived their knowledge of ship-building from the Carthaginians, a warlike and trading people

descended from the Phœnicians, who were celebrated for their skill in the construction and management of vessels. In consequence of their contests with the Romans, the latter, after having suffered one or two defeats in naval engagements, acquired the art of building ships from their rivals, and successfully employed it to their overthrow.

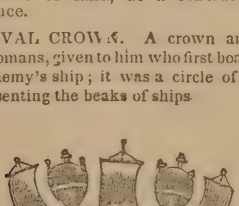
The modern art of ship-building appears to have been derived from the northern tribes, among whom we find that trees hollowed out like canoes were first used. The crusades first gave the impulse to improvements in ship-building, which, notwithstanding, continued for some time at a low ebb. Even in the reign of Edward the First, ships were very insignificant in point of size, for it appears that forty men were deemed sufficient to man the largest vessels in England. The states of Venice and Genoa probably first increased the size of their ships, but they were soon surpassed by the Spaniards, who first employed cannon. The Hanse Towns made such advances in naval architecture, that in the fourteenth century it was usual for them to let their ships out to foreign princes. In the reign of Henry IV. ships of considerable size began to be built in England, and they continued to increase in magnitude until the reign of Henry VIII. when two very large ships were built, namely, the Regent, of 1000 tons burthen, and the Henry Grace Dieu, which was larger.

NAUMACHY. In anc. Rome, a show or spectacle representing a sea-fight.

NAUMANITE. A peculiar ore of silver, found in cubical crystals, in thin plates, and granular.

NAUSCOPY. The pretended art of discovering approaching ships, or the existence of land, at a considerable distance.

NAVAL CROWN. A crown among the Romans, given to him who first boarded an enemy's ship; it was a circle of gold representing the beaks of ships.



NAVE. The body or main part of a church.

NAVIGATION. The art of conducting a vessel at sea from one port to another. This is navigation, properly so called, to distinguish it from common navigation or coasting, that is, conducting vessels from one port to another lying on the same coast; and inland navigation, which is performed by small craft on canals. There is also a submarine navigation, that is, the art of sailing under water by means of the diving bell, &c. Navigation is divided into theoretical navigation, which treats of the difference of latitude, the difference of longitude, the reckoning or distance run, the course or rumb run on, besides the different modes of sailing—plain sailing, in which the plane chart is made use of; Mercator's or globular sailing, in which Mercator's chart is used, &c. Practical navigation has respect to the places sailed to, or the waters sailed over, and is either proper, common, inland, &c. as before explained.

NAVIGATION, History of. Navigation and commerce without doubt took their rise together; for the desire of gain, being one of the most powerful incentives to action, would naturally lead men to explore distant countries. Hence we find that the Phœnicians, particularly those of Tyre, who were the first trading people on record, were also the first to make fleets, and by the aid of astronomical observations to extend their voyages to some distance from their own shores. The Carthaginians followed the course of their ancestors the Tyrians, and addicted themselves so thoroughly to trade and navigation that they surpassed every other nation of antiquity in the cultivation of these two arts. They first made the quadremes, or four-oared galleys, and probably were the first who made cables for their large vessels of the shrub spatum. They likewise pushed their discoveries to a vast extent. They were perfectly acquainted with the Mediterranean and all the ports in it, and proceeded to the westward farther than any other nation. Britain and the Canaries were known to them, and in the opinion of some they even went as far as America. The formidable fleets they fitted out, the quantity of shipping they always kept in their employ, and the honour they so long enjoyed of being the masters of the sea, sufficiently attest the advances which they made in navigation. As the Greeks and Romans were more addicted to war than commerce, they employed their shipping principally in transporting their men to the countries they were going to attack, or in engaging their enemies at sea. That the Athenians ex-

called all the other Greeks in their maritime warfare is evident from the victories which they gained over the Persians by sea. As to the Romans, they are said by Polybius to have been utter strangers to naval affairs, and quite ignorant of shipbuilding, before the first Punic war, when a Carthaginian galley, having accidentally stranded on the coast of Italy, was taken by them, and served as a model for the construction of vessels. Of this they made so good a use as to raise a fleet of one hundred and twenty galleys, with which they were enabled to beat the Carthaginians on their own element. It does not appear, however, that either of these people went to any distance in their vessels, either for purposes of trade or curiosity. The only voyage of discovery we read of in antiquity was that made by Nearchus, under the auspices of Alexander. In all other countries, navigation was encouraged solely for the purposes of commerce, as by the Egyptians and the Byzantines, and subsequently by the Venetians and Genoese until the time of the crusades, when a spirit of adventure was excited throughout all Europe, and preparations were made for voyages to the Holy Land, which led to the improvement of navigation. The laws of Oleron, framed and established by our king Richard I., show that a system of maritime policy was now thought necessary. Of the progress of the English navy, it suffices here to observe, that the first statutes respecting it were passed in the reign of Richard II. and that from that period to the present it has been the object of government to raise it to the highest pitch of perfection. As to the art of navigation generally, nothing contributed so much to its advancement as the invention of the mariner's compass, in the fourteenth century, which gave so great a facility to the exploring of unknown regions. From this time many considerable voyages were made, particularly by the Portuguese, under the auspices of Henry Duke of Visco, who was particularly skilled in cosmography, and employed a person from the island of Majorca to teach navigation and to make instruments and charts. In the subsequent reign of John II. one Martin de Bohemia, a Portuguese, native of the island of Fayal, a pupil of Regiomontanus, calculated, about 1485, for the use of navigators, tables of the sun's declination, and recommended the astrolabe for taking observations at sea. About the same time, Columbus conceived the idea of exploring a passage to India by sailing directly towards the west across the Atlantic ocean, and being furnished with a small armament of three ships by Ferdinand and Isabella of Spain, he set sail in August, 1492, and steered directly for the Canary Islands; thence holding his course due west, he stretched away into unfrequented and unknown seas. After encountering incredible difficulties and hardships from the elements, and a scarcity of provisions, but above all from the mutinous spirit of his crew, he arrived at Guanami, one of the large cluster of islands called the Lucaya, or Bahama Isles. He also discovered Cuba, Hispaniola, and several other small islands, and, having left a colony in a fort at Hispaniola, returned to Spain in March, 1493. In September following, he set out on his second voyage, and sailed by the Leeward Islands to Hispaniola; and in a third voyage, undertaken in 1498, he discovered the continent of America. In the same year, Vasco de Gama returned to Lisbon from a voyage to the East Indies by the Cape of Good Hope. As from practice the art of navigation was thus materially improved, so likewise additional efforts were now made to advance it theoretically, and to extend its cultivation. The emperor Charles V founded a lecture at Seville for the improvement of navigation, which derived much advantage from the discovery of the variation of the compass, and the use of the cross staff. The subject also now began to engage the pens of the learned. Two treatises, the first of the kind, containing a system of the art, were published in Spanish, the first by Pedro de Medina, at Valladolid, in 1545, called 'Arte de Navegar,' the other at Seville, in 1556, by Martin Cortes, under the title of 'Breve Compendio de la Sphera y de la Arte de Navegar, &c.' which was translated into English and passed through several impressions.

The finding of the longitude, which is still a desideratum in the art, had even early engaged the attention of writers; for we find that Pedro Nunez, or Nonius, published a treatise on this subject in 1537 in the Portuguese language, which was afterwards printed at Basil in Latin, under the title of 'De Arte et Ratione Navigandi.' In this work the problem of determining the latitude from two observations of the sun's altitude and the intermediate azimuth is resolved. In 1557, Bourne published his 'Regiment for the Sea,' intended as a supplement to Cortes; and in 1581, Michael Coignet, a native of Antwerp, published his 'Instruction Nouvelle des Points plus excellens et necessaires tou-

chant 'Art de Naviger,' ntended as an improvement upon Medina. The discovery of the dipping-needle was explained by Robert Norman, in his 'New Attractive,' a pamphlet, to which is commonly subjoined William Burrough's 'Discourse of the Variation of the Compass.' In 1594, Captain John Davis published a small treatise entitled the 'Seaman's Secrets,' which was much esteemed at that time.

As the errors of the plane chart had been much complained of by those who were conversant with the subject, Gerard Mercator was led to construct a universal map, for the purpose of obviating those objections, the use of which was afterwards fully illustrated by Mr. Edward Wright of Cambridge, who, in his 'Correction of certain Errors in Navigation,' printed in 1599, showed the true method of dividing the meridian from Cambridge, as also the manner of constructing the table, and its uses in navigation. The method of approximation by what is called the middle latitude is mentioned by Gunter in his works, printed in 1623, but was not brought into general use until some time after. The application of logarithms to navigation was also made by this author in a variety of ways; but Thomas Addison, in his 'Arithmetical Navigation,' is said to have been the first to apply logarithmic tables to the cases of sailing. From this time several writers in England and elsewhere contributed to the improvement of the science, as Gellibrand, in a 'Discourse Mathematical on the Variation of the Needle;' Norwood, in his 'Seaman's Practice;' John Baptist Riccioli, at Bologna, in 1661; Father Millet Dechals, in 1674 and 1677; M. Bougier, in 1698; William Jones, in a 'New Compendium of the whole Art of Navigation;' Peter Bouque, in his 'Nouveau Traité de Navigation;' and Dr. Robertson's 'Elements of Navigation,' to which was added a valuable preface by Dr. James Wilson.

NAVIGATOR. One who follows the practical part of navigation; particularly one who goes on voyages of discovery.

NAUMACHIA. The representation of a sea fight, which among the Romans formed a part of the Circensian games.

NAUTICAL. An epithet for what belongs to the navy or navigation, as the Nautical Almanack, which in England is published under the direction of the Board of Longitude, for the use of mariners.

NAUTILUS. A genus of testaceous worms, one species of which, called the sail shell, floats on the surface of the sea in its shell, by the help of a membrane which it extends, so as to make it serve the purpose of a sail.

NAVY. The whole naval establishment of any country, comprehending the ships, officers, men, stores, &c. &c. That part of the navy of England, which is distinguished by the title of the Royal Navy, comprehends all ships of war and their crews, &c

NAVY BOARD (in the English Navy) consists of a lord high admiral or lords commissioners, with a number of inferior officers.

NAZARENES. A term of reproach among the Jews for our Saviour and his disciples.

NAZARITES. A sect among the Jews affecting certain peculiarities.

N. B. i. e. Nota Bene. Take notice

NEAP TIDES. Tides in the second and last quarter of the moon, not so high as the spring tides.

NEEDLE-GUN. A breech-loading fire-arm, which is exploded by means of a steel point and detonating powder, first used by the Prussians against the Austrians in 1866.

NEEDLE-ORE. A native sulphuret of bismuth, found in a gold mine in Siberia.

NEBULÆ. Spots in the heavens, some of which consist of clusters of exceedingly small stars, others appear like luminous spots of different forms.

NECK. That part between the head and the body.

NECK. Any thing long in the form of the neck, as the neck of a bottle, a violin, &c.

NECROLOGY. A register of the deaths of benefactors in a monastery; also a register of distinguished persons who die within a certain period.

NECROMANCY. A sort of magic practised by the Jews, Greeks and Romans, by which they attempted to raise the dead or make them appear.

NECTAR (in Mythology). The drink of the gods, according to the poets.

NECTAR (in Medicine). A drink of a delightful taste, smell, and color.

NECTARINE. A sort of peach, having a smooth rind and a firm flesh.

NECTARY. The melliferous part of a vegetable.

NEEDLE. An instrument of steel for sewing, having a sharp point for piercing, and an eye to receive the thread; also an instrument for knitting, which is a simple steel wire.

NEEDLE, or Magnetical Needle. A needle touched with the loadstone, and

suspended on a pivot, on which, playing at liberty, it directs itself to the north and south of the horizon. Magnetical needles are called horizontal when balanced equally on both sides, and inclinatory or dipping when they are constructed so as to show the dip of the needle, or how far it points below the horizon.

NEGATIVE. An epithet for what implies negation.

NEGATIVE ELECTRICITY. That state of bodies, in which they are deprived of some portion of the electricity which they naturally contain.

NEGATIVE PREGNANT (in Law). A negative which implies an affirmation, as when a person denies having done a thing in a certain manner or at a certain time, as stated in the declaration, which implies that he did it in some manner.

NEGATIVE QUANTITIES (in Algebra). Quantities having the negative sign set before them.

NEGATIVE SIGN (in Algebra). A sign marked thus —, to denote less than nothing.

NEGOTIATION. The conducting a treaty, either in political or commercial matters.

NEGROES. The black inhabitants of Africa, having woolly hair and a peculiar complexion. They have hitherto been the objects of the inhuman traffic called the slave-trade. They are very numerous in the central parts of Africa, and it appears by the late Travels of Denham and Clapperton and others, that powerful kingdoms exist there, in a state further advanced toward civilization, than was supposed. It has been imagined that the negroes are inferior in capacity to the other races of mankind, but a better knowledge of Africa may throw doubt upon this opinion.

NEM. CON. An abbreviation for nemine contradicente, that is, no one opposing, applied to the decisions of the English parliament and other public assemblies.

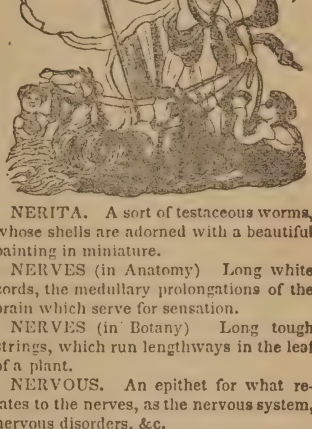
NEM. DISS. An abbreviation for nemine dissentiente, no one dissenting, that is, with unanimous consent.

NEPHRITE A sort of stone of the talc kind, of a dark leek-green colour, verging to blue. It is found in China, America, and Egypt, and is highly prized by the Hindoos and Chinese, by whom it is made into talismans.

NEPHRITIC. Relating to the kidneys.

NE PLUS ULTRA, i. e. no farther. The extremity, or utmost extent to which any thing can go

NEPTUNE. The god of the sea, brother of Jupiter, in the heathen mythology who is known by his trident.



NERITA. A sort of testaceous worms, whose shells are adorned with a beautiful painting in miniature.

NERVES (in Anatomy) Long white cords, the medullary prolongations of the brain which serve for sensation.

NERVES (in Botany) Long tough strings, which run lengthways in the leaf of a plant.

NERVOUS. An epithet for what relates to the nerves, as the nervous system, nervous disorders, &c.

NEST. The lodging prepared by birds for incubation and receiving their young.

NESTORIAN. One of an ancient sect founded by Nestorius of Constantinople in the fifth century, who taught that the divine and human natures of Christ did not unite and form one person, that Mary was not the mother of God, but of Christ.

NEUROPTERA. An order of insects in the Linnæan system, including those which have the wings reticulate, as the dragon fly, the day fly, the lion ant, &c.

NEUTRALIZATION (in Chymistry). The process by which an acid and an alkali are so combined as to disguise each other's properties.

NEUTRAL SALTS. Salts which partake of the nature of both an acid and an alkali.

NEWFOUNDLAND DOG. A very sagacious kind of spaniel that is web-footed, and an excellent swimmer

NEWSPAPER. A periodical publication, which appears once or oftener in the week, containing an account of the political and domestic occurrences of the time.

NEW STYLE, abbreviated N. S. The Gregorian method of reckoning the days of the year, so as to adjust the odd hours and minutes in the period of the sun's revolution

NEWT. A small animal of the lizard tribe.

NEWTONIAN PHILOSOPHY. The doctrine of the universe as explained by Sir Isaac Newton, respecting the properties, laws, affections, forces, motions, &c. of bodies, both celestial and terrestrial. The chief parts of the Newtonian philosophy are explained by the author in his Principia, or Principles of Natural Philosophy.

NICENE CREED. A particular creed formed at the first general council assembled at the city of Nice by Constantine the Great, A. D. 315. This creed has since been adopted by the church of England.

NICKEL. A metallic substance, mostly found in a metallic state, but sometimes in that of an oxide. Its ores have a coppery red color.

NICKEL KUPFER, or the SULPHURET OF NICKEL, is a compound of nickel, arsenic, and a sulphuret of iron.

NICTITANT MEMBRANE (in Comparative Anatomy). A thin membrane chiefly found in birds and fishes, which covers the eyes of these animals, so as to shelter them from the dust and excess of light.

NIGHT (In Law). The period of darkness, when a man's face cannot be discerned.

NIGHTHAWK. An American bird, that makes its appearance at evening, and is seen high in the air, flying about in pursuit of insects. It has been erroneously supposed that it was the whippoorwill.

NIGHTMARE. A heavy, pressing sensation on the breast during the night, to which nervous persons are subject.

NIGHTINGALE. A small brown European bird, that sings beautifully during the night.

NIGHTSHADE, or DEADLY NIGHTSHADE. A poisonous plant, bearing a bell-shaped corolla, from the leaves of which painters extract a fine green.

NIHIL DICIT (in Law). A failure on the part of the defendant to put in an answer to the plaintiff's declaration, &c., by which omission judgment is of course had against him.

NILGHAU, or NYLGHAU. The Persian name for a species of antelope, the antilope picta of Linnæus, having short horns bent forward, and the upper and under parts of the neck maned

NIMBUS (among Antiquarians). A circle observed on some medals, or round the head of some emperors, answering to the circles of light drawn around the images of saints.

NISI PRIUS. In England, a commission directed to the judges of assize empowering them to try all questions of fact issuing out of the courts of Westminster, that are then ready for trial; and as, by the course of the court, all causes are heard at Westminster, the clause is added in such writs, Nisi prius justiciarii ad capiendas assisas venerint; that is, Unless before the day fixed the justices come into the county in question; whence the writ

as well as the commission, have received the name.

NITRATES. Salts formed of nitric acid with salifiable bases, as the nitrate of potash, soda, &c.

NITRE, vulgarly called SALTPETRE. A neutral salt, being a crystallized, pellucid, and whitish substance, of an acrid and bitterish taste, impressing a strong sense of coldness on the tongue. It is found ready formed in the East Indies and in the southern parts of Europe, but by far the greater part of the nitre in common use is produced by the combination of substances in suitable situations, which tend to produce nitric acid, particularly where animal matter becomes decomposed by the air, such as slaughter-houses, drains, and the like.

NITRIC ACID. A heavy, yellow liquid, procured by the chymical combination of oxygen and nitrogen gas. Diluted with the sulphuric and muriatic acids, it forms the well known liquid aquafortis.

NITROGEN, or AZOTE. The principle of nitre in its gaseous state, which constitutes four fifths of the volume of atmospheric air. It has neither smell nor taste, and is not to be procured in a separate state; but is remarkable for the properties of extinguishing flame and animal life.

NITRO MURIATIC ACID. A compound of nitric and muriatic acids, formerly called aqua regia.

NITRO-CALCITE. Nitrate of lime, having a greyish-white color, occurring in efflorescences on old walls, and in limestone caves.

NITRO-GLYCERINE. A powerful blasting oil, and highly dangerous explosive agent, prepared by the action of nitric and sulphuric acids on glycerine.

NITURET. A body of oxygen, hydrogen, carbon, and one atom of nitrogen.

NOBLE. An English coin used in the reign of Edward III. Value about $1.75.

NOCTANTER. By night.

NOCTURNAL. An epithet for what belongs to the night, as a nocturnal arch, the arch described by the sun or a star in the night

NOCTURNAL, or NOCTURLABIUM. An instrument used at sea for finding the latitude and hour of the night.

NODDY. A sea fowl of the tern kind

NODE (in Surgery). A hard tumour rising out of a bone.

NODE (in Dialling) The axis or cock of a dial.

NODES (in Astronomy). Two points where the orbit of a planet intersects the ecliptic: the Northern or Ascending Node, called the dragon's head, is marked thus ☊, the Southern or Descending Node, the dragon's tail, marked thus ☋.

NOLLE PROSEQUI. An agreement on the part of the plaintiff not to prosecute his suit.

NO MAN'S LAND. A sea term for the space in midships, between the after part of the belfry, and the fore part of a ship's boat, when she is stowed upon the boom.

NOMENCLATURE. A catalogue of the most useful and significant words in any language or in any particular science

NOMINATIVE (in Grammar). The first case of a noun, or the name itself.

NONAGESIMAL. The ninetieth degree of the ecliptic.

NONCHALANCE. An affected indifference.

NON COMPOS MENTIS (in Law) Not of sound mind.

NON CONDUCTORS (in Electricity) Bodies which do not become electric by being placed in the neighborhood of an excited body.

NONCONFORMIST. In England, a person not conforming to the church of England.

NON EST INVENTUS, i. e. literally, He has not been found. The answer made by the sheriff in the return of the writ, when the defendant is not to be found in his bailiwick.

NONPLUS. A difficulty or embarrassment, when one cannot proceed any way.

NON PROS. i. e. Non prosequitur, He does not prosecute. A nonsuit, or the form of renouncing or letting fall a suit by the plaintiff.

NONRESIDENCE (in Law). In England, the not residing on their benefices, as applied to spiritual persons.

NONSUIT. The letting fall or renouncing a suit.

NORMAL. A perpendicular.

NORROY KING AT ARMS. In England, the third king at arms.

NORTH POLE. A point in the northern hemisphere, ninety degrees distant from the equator.

NORTH POLE. In astronomy, an imaginary point in the northern hemisphere, 90° from the equator.

NORWAY RAGSTONE. A coarse variety of whetstone.

NOSING. In architecture, the moulding upon the upper edge of a step.

NOSOLOGY. The doctrine of diseases, or their classification and nomenclature.

NOTATION (in Arithmetic and Algebra). The method of expressing numbers or quantities by signs or characters appropriated for that purpose. The Jews, Greeks, and Romans expressed their numbers by the letters of their alphabet; the Arabians had particular characters called figures, which have been universally adopted in Europe in all arithmetical operations. The Roman mode of notation is also still in use in marking dates, or numbering chapters, &c.

NOTATION (in Music). The manner of expressing sounds by characters.

NOTE. Any short writing or memorandum.

NOTE (in Music). A character to distinguish the pitch and time of a sound.

NOTE OF HAND A writing under a man's hand, by which one person engages to pay another a sum of money on a certain day, or on demand: this may either be in the form of a bill or of a promissory note.

NOT GUILTY (in Law) The general issue or plea of the defendant in a criminal action.

NOTICE (in Law). The making something known that a man was or might be ignorant of, and which it was proper he should be made acquainted with.

NOV. An abbreviation for November.

NOVEL. A narrative of fictitious events and characters. When the incidents and persons are not probable, it is called a romance; and if only a short story, a novelette.

NOVEMBER. The eleventh month of the Julian year. It was called November because it was the ninth of Romulus's year.

NOVICE (in the Romish Church). One who has entered his novitiate or year of probation, before he takes his vow; in a general sense, a learner in any profession, an unskilful person.

N. S An abbreviation for new style, or the new mode of forming the calendar.

NOUN (in Grammar). A part of speech, the name of the thing itself, as horse, dog, &c.

NUCLEUS. The kernel of a nut, &c.

NUCLEUS (in Astronomy). The body of the comet, otherwise called the head

NUDE CONTRACT. A bare, naked contract, without a consideration, which is void in law.

NUISANCE (in Law). Any annoyance which tends to the hurt or inconvenience of another.

NUMBER (in Arithmetic). An assemblage of several units or of several things of the same kind. Whole numbers are otherwise called integers, as 1, 2, 3. Broken numbers are fractions, as $\frac{1}{2}$. Cardinal numbers express the number of things, as 1, 2, 3. Ordinal numbers denote the order of things, as 1st, 2d, 3d, &c. Even numbers are those which may be divided into two equal parts, without a fraction, as 6, 12, &c. Uneven numbers are such as leave a remainder after being divided, as 5, 13, &c. A square number is the product of any number multiplied by itself, as 4, the product of 2 multiplied by 2.

NUMBER (in Grammar). An inflection or change of ending in nouns and verbs, to denote number. Numbers are singular to denote one, dual to denote two, or plural to denote more than one.

NUMBERS (in Poetry). Measures or cadences which render a verse agreeable to the ear.

NUMERAL. Any character which expresses a number, as, 1, 2, 3.

NUMERAL LETTERS. The Roman letters I. II. III. IV. &c. which denote numbers.

NUMERATION. The art of expressing in figures any number proposed in words, or expressing in words any number proposed in figures.

NUMERATOR. The number in the upper line of a fraction, denoting the number of the given parts taken, as 3 in $\frac{3}{4}$, that is, three out of the four parts of an integer.

NUMERICAL. Relating to numbers, as numerical algebra, that which is performed by the help of numbers.

NUMISMATICS. The science of medals and coins.

NUNCIO. The pope's ambassador.

NUNCUPATIVE WILL. A will made by word of mouth.

NUNNERY (in the Romish Church). A religious house for nuns, or females who have bound themselves by vow to a single life.

NURSERY. A chamber for young children.

NURSERY. A place set apart for young trees and shrubs.

NUTATION (in Astronomy). A tremulous motion of the earth's axis.

NUTGALLS. Excrescences on the leaf of the oak The Aleppo galls are imported for the use of dyers, calico printers, &c.

NUT HATCH. A small species of Woodpecker.

NUTMEG. A spice, the fruit of a tree as big as a pear tree, growing on the island

of Banda, in the Eastern Ocean. It is one of the finest of spices, and is carried to all parts of the world as an article of commerce The nutmeg is the kernel of the fruit, not unlike the peach, the rind or coat of which is called mace.

NUX VOMICA. A flat, compressed, round fruit, about the breadth of a shilling, brought from the East Indies; it is a certain poison for dogs, cats, &c., and is one of the ingredients unlawfully infused into beer, to give it a stupifying quality.

NYL GHAU. See Nil Ghau.

NYMPHÆ. The chrysalis, or third stage of insects, between the grub and the fly.

NYMPHS. The goddesses of the woods, according to the poets. They were celestial and terrestrial, the former guiding the heavenly bodies, the latter presiding over the woods. They are represented as beautiful creatures, inhabiting every forest and glen.

## O.

O, the fourteenth letter of the alphabet, used as a numeral for eleven, and with a stroke over it, thus Ō, for eleven thousand.

OAK. A tree celebrated for its timber, which is so tough that the sharpest tools will scarcely penetrate it. It is also remarkable for its slowness of growth, bulk, and longevity. Oaks have been found to grow only from fourteen to twenty inches in diameter in the space of eighty years. The live oak is a species particularly valuable for ship-building. Great quantities are obtained in Florida.

OAKUM. Old ropes untwisted and made into loose hemp for calking ships.

OAR. A long pole with a flat, thin end, by which boats are driven along in the water.

OATH (in Law). A solemn affirmation or denial of a thing, accompanied with an appeal to God.

OATH OF ALLEGIANCE. In England, the oath which the subject takes when required to bear true allegiance to the king

OATH OF SUPREMACY. In England, the oath which establishes the supremacy of the king over every other power, temporal or spiritual, within the realm, whereby the supremacy of the pope was renounced at the Reformation.

OATH OF ABJURATION. An oath which expressly establishes the succession of the reigning family to the throne of England, to the exclusion of the Stuart family or any other.

OATS. A grain, the peculiar food of horses, and in Scotland and the north of England, also the food of man. Oatmeal, the flour of the oats, is also much used medicinally.

OBELISK (in Architecture). A square stone growing smaller from the base to the summit.

OBELISK (among Printers). A mark of reference, thus (†).

OBJECT GLASS. A glass in a telescope or microscope, at the end of the tube next to the object.

OBIT (in the Romish Church). An annual service for the dead.

OBITUARY. A register of the deaths

OBLATE. Flattened, an epithet for a sphere or spheroid.

OBLATION. What is laid on an altar or given at the altar by way of offering.

OBLIGATION (in Law). A bond containing a penalty on condition of not performing certain covenants annexed.

OBLIQUE. Deviating from a perpendicular line or direction, as an oblique angle, &c. that which is not a right one.

OBLIQUE CASES (in Grammar). The cases of nouns declined from the nominative.

OBLIQUITY OF THE ECLIPTIC The angle which the ecliptic makes with

the equator, being now estimated at something less than 23 degrees 28 minutes, as the ecliptic approaches nearer to a parallelism with the equator at the rate of about 42 seconds in 100 years.

OBOLUS. A small Grecian coin, equal to about three cents.

OBSERVATION. The observing the phenomena of the heavenly bodies by means of any instrument.

OBSERVATORY. A place erected in some lofty situation, and fitted up with telescopes, quadrants, &c. for the purpose of making astronomical observations, such as the observatories at Greenwich, Paris, Munich and Cambridge, which are the most celebrated among the modern observatories. The ancient Chaldeans had also similar places.

OBSERVATORY, EQUATORIAL, or PORTABLE. An instrument for solving many problems in astronomy, as finding the meridian, pointing the telescope on a star, though not in the meridian, in full daylight, &c.

OBSIDIONAL CROWN. A crown made of the grass that grew in a besieged place, which the Romans gave to the general by whom the town was taken.

OBT. An abbreviation for obedient.

OBTUSE ANGLE. Any angle greater than a right angle. See ANGLE.

OCCIDENT. Westward, as the occident equinoctial, &c.

OCCIPUT. The back part of the head.

OCCULTATION. The obscuration of any star or planet by the interposition of any other body, as the moon, &c.

OCCULTATION, CIRCLE OF. An imaginary circle round the poles, which contains those stars that are not visible in our hemisphere.

OCCULT DISEASES. Diseases, the causes and treatment of which are not understood.

OCCULT QUALITIES. Qualities in bodies which do not admit of any rational explanation.

OCCUPATION (in Law). The possession and use of lands or tenements.

OCEAN. A vast collection of salt and navigable waters, enclosing the continents or quarters of the globe, Europe, Asia, Africa, and America, and comprehended under the several divisions of the Atlantic, the Pacific, Indian, Northern, and Southern Oceans.

OCELOT. A very fierce, but beautiful animal of the cat kind, found in South America.

OCHRE. A sort of earth consisting of alumina and red oxide of iron.

OCTAGON. A figure of eight sides and angles.

OCTAHEDRON. One of the five regular bodies, consisting of eight equal and equilateral triangles.

OCTANDRIA (in Botany). One of the Linnæan classes, consisting of plants having eight stamina to each flower.

OCTANT. An aspect of two planets when they are distant from each other 45 degrees, or the eighth part of a circle.

OCTAVE (in Music). The eighth interval in a scale of sounds.

OCTAVO, i. e. in eight, expressed by printers thus, 8vo. The form of a page by folding a sheet into eight leaves, so as to make it consist of sixteen pages.

OCTOBER. The eighth month in the year, containing thirty-one days.

OCULIST. One who cures the disorders of the eyes.

ODD. An epithet for any number in the series of 1, 3, 5, 7, &c.

ODE. A poem written to be sung to music.

ODOUR. The scent or smell.

ŒDEMA. Any tumour or swelling.

ŒSOPHAGUS. The gullet, a membranaceous canal, reaching from the fauces to the stomach.

OFFENCE (in Law). The violation of any law; this is capital, if punished with death, and not capital, if visited with any other punishment.

OFFERINGS (in Law). In England, Church dues, payable by custom, as the Easter offerings, or the offerings at marriages, &c.

OFFICE. That function by virtue whereof a man hath some employment, either in the public affairs or those of a private individual.

OFFICER (in Law). One filling an office or post under government.

OFFICER (in Military and Naval Affairs). One acting under government in a military or naval capacity.

OFFICERS, COMMISSIONED (in the Army). Appointed by commission.

OFFICERS, COMMISSIONED (in the English Navy), hold their commissions from the Lord High Admiral or Lords of the Admiralty.

OFFICERS OF THE CROWN. The great officers of the crown in England are the Lord High Chancellor, the Lord High Steward, the Lord High Treasurer, the Lord President of the Council, the Lord Privy Seal, the Lord Chamberlain, the Lord High Constable, and the Earl Marshal.

OFFICIAL (in Law) A deputy appointed by the archdeacon for the execution of his office

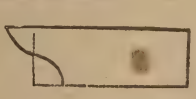
OFFICINAL. An epithet for what is sold in shops, as officinal plants, herbs, medicines, &c

OFFING. The open sea, or that part of the sea at a distance from the shore, where there is deep water

OFFSETS (in Botany). Young shoots that spring and grow from shoots.

OFFSETS (in Surveying). Perpendiculars let fall, and measuring from the stationary lines to the hedge, fence, or extremity of an enclosure.

OGEE (in Architecture). A moulding formed like the letter S.



OIL. A fat, unctuous substance, which derives its name from olea, the olive, because it was at first principally known as the produce of the olive. Oils are distinguished by chymistry into volatile or essential oils, which have a strong, acrid taste, and a strong, fragrant smell, being obtained from smelling plants; and fixed oils, which are thick and viscid, insoluble in water, and do not boil under 600 degrees: these latter oils are obtained from both animal and vegetable substances, as train oil, olive oil, linseed oil, &c.

OIL GAS. A gas extracted from fat oil, which is more expensive and not reckoned so good as that procured from coals

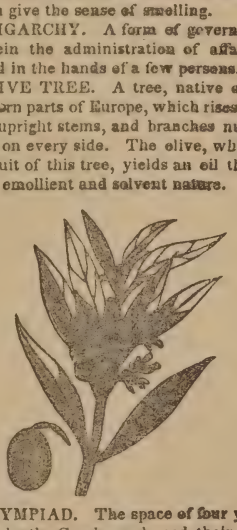
OLERACEÆ One of the Linnæan natural orders of plants, containing potherbs, as spinage, thyme, mint, &c

OLERON, LAWS OF. A code of maritime law, so called because it was framed by king Richard I. on an island off the coast of France.

OLFACTORY NERVES The nerves which give the sense of smelling.

OLIGARCHY. A form of government wherein the administration of affairs is lodged in the hands of a few persons.

OLIVE TREE. A tree, native of the southern parts of Europe, which rises with solid upright stems, and branches numerously on every side. The olive, which is the fruit of this tree, yields an oil that is of an emollient and solvent nature.



OLYMPIAD. The space of four years, whereby the Greeks reckoned their time from the circumstance of the Olympic games having been celebrated once in four years. The first Olympiad is dated, according to some, 774 years before Christ.

OLYMPIC GAMES. Solemn games among the Greeks, in honour of Jupiter Olympus, at which five kinds of exercises were exhibited, namely, leaping, running, wrestling, quoiting, and whirlbats.

OMEGA. The last letter of the Greek alphabet.

OMENTUM. A double netlike membrane spread over the entrails.

OMER. A Hebrew measure, about three pints and a half English.

OMNIUM. A term among stock brokers for all the kinds of stock, as 3 per cents, 4 per cents, &c., which are sold

together as they were bought by the contractors from government.

ONION. A bulbous edible root, growing in gardens, and used for various culinary purposes.

ONYX. A precious stone, accounted a species of opaque agate. It is a semipellucid gem of different colours, but the bluish white kind is looked upon as the true onyx of the ancients.

OPACITY That property in bodies by which they are rendered impervious to the rays of the sun, owing probably to the density of the parts.

OPAL. A precious stone of various colours, which comes under the class of pellucid gems. It is found in many parts of Europe, especially in Hungary. When first dug out of the earth, it is soft, but it hardens and diminishes in bulk by exposure to the air. The substance in which it is found is a ferruginous sand stone.

OPERA. A dramatic composition set to music. It is sung on the stage, accompanied and interspersed with dialogue.

OPERA-GLASS. A kind of glass constructed in a small wooden tube, so as to view a person in a theatre, and, as the glass is made to point at a different object from that which is viewed, it may be used without any one knowing exactly who is observed.

OPERATION (in Surgery). Any exercise of the surgical art which is performed by the use of instruments.

OPERATION (in Chemistry). Any process that leads to a given result.

OPERATION (in Military Affairs). Any movement of an army for the attainment of a particular object.

OPHTHALMIA. An inflammation of the membranes of the eye, a disease which particularly affected the English soldiers during their stay in Egypt.

OPIATE. A medicine made of opium.

OPIUM. An inspissated gummy juice obtained from the head of the poppy. It is imported in cakes from Persia, Arabia, and other warm climates; is of a reddish brown colour, and of a nauseous bitter taste; and has a powerfully narcotic property.

OPOBALSAMUM, Balm of Gilead. A gummy juice of the balsam tree.

OPOPONAX. A gummy, resinous juice obtained from the root of an umbelliferous plant growing in warm climates.

OPOSSUM An American animal that lives in holes and woody places The female is remarkable for having two or three pouches, wherein the young conceal themselves in time of danger. It is found only in Virginia, and the vicinity.

OPPOSITION (in Astronomy). One of the aspects of the planets, when they are 180 degrees distant from each other, that is, in a diametrically opposite relation to each other

OPTATIVE (in Grammar). A mode or form of a verb by which is expressed the wish or desire to do a thing.

OPTIC. Pertaining to the sight; as Optic Glasses, glasses contrived for viewing objects which cannot otherwise be seen, as spectacles, telescopes, microscopes, &c

OPTICIAN. A dealer in or maker of optical instruments.

OPTIC NERVES. The second pair of nerves of the brain, which perforate the bulb of the eye, and serve for the sense of sight.

OPTIC PLACE OF A STAR. That point of its orbit in which it appears to be to our eye

OPTIC PYRAMID. A pyramid formed by rays drawn from the several points of the perimeter to the eye.

OPTICS. That branch of natural philosophy which treats of the nature of light and colours, or of the general doctrine of vision. It is distinguished into three kinds: namely, optics, properly so called, which treats of direct vision; catoptrics, which treats of reflected vision, or that which is performed by means of rays reflected from speculums or mirrors; and dioptrics, which treats of refracted vision, or that which is performed by means of rays refracted or turned out of their course by passing through mediums of different densities, chiefly through glasses or lenses.

OPTICS, History of. The properties of light naturally attracted, at an early period, the attention of philosophers who made nature their study. Empedocles, who flourished upwards of four hundred years before Christ, is said to have written a treatise on light; and the works of Aristotle present us with a number of ques

tions and observations concerning optical appearances. This philosopher was aware that it is the reflection of the light from the atmosphere which prevents total darkness after the sun sets, and in those places where he does not shine in the daytime. He also considered that rainbows, halos, and mock suns were all occasioned by the reflection of the sunbeams in different circumstances, by which an imperfect image of his body was produced, the colour only, and not his proper figure, being exhibited. Euclid wrote a treatise on optics and catoptrics, in which he shows the chief properties of reflected rays in plane, convex, and concave surfaces, in a geometrical manner, beginning with that concerning the equality of the angles of incidence and reflection. He also takes some notice of dioptrics, and remarks on the effect of refraction in regard to an object at the bottom of a vessel, which, when water is poured in, is brought to view, that was not to be seen above the edge of the vessel before the water was poured in. As to the effect of burning glasses, both by reflection and refraction, this is noticed not only by Euclid, but by many other of the ancients; and, if we give credit to historians, the exploits performed by Archimedes in setting fire to the vessels of the Romans before Syracuse, by means of burning mirrors, prove that his practical knowledge exceeded that of modern times. There is no doubt that he wrote a treatise on burning glasses, as also concerning the appearance of a ring or circle under the water, which shows that this phenomenon had not escaped his notice. The ancients were also acquainted with the production of colours by means of refracted light. Seneca observes that when the light of the sun shines through an angular piece of glass, it shows all the colours of the rainbow; also that the colours seen in a pigeon's neck when it changes its position, are the effect of refraction, and on the same principle that a speculum, not having any colour of its own, will assume that of any other body.

Besides, the ancients were not unacquainted with the magnifying power of glass globes filled with water, for the ancient engravers used to employ such a glass globe, in order, as is supposed, to magnify the figures, that they might execute their work with more correctness. Ptolemy, who wrote a considerable treatise on optics, was well acquainted with the refraction of light, and determined the ratio of the angles of refraction, as compared with that of the angles of incidence, with such accuracy that there is but a trifling difference between the results of his observations and those of Newton; not more than might arise from his having used glass and water of specific gravities something different from those employed by Newton. It appears also from this work of Ptolemy, as also from his Almagest, that he employed his knowledge of optics in his astronomical observations, for he was fully aware that refraction decreases from the horizon to the zenith, and that, by means of this refraction, the intervals between the stars appear less when near the horizon than in the meridian. He also accounts for the remarkably great apparent size of the sun and moon when seen near the horizon, by ascribing the appearance to the refraction of the rays by vapours, which actually enlarge the angle under which the luminaries appear, just as the angle is enlarged by which an object is seen from under water.

The next writer of any importance on the science of optics was Alhazen, an Arabian philosopher, who flourished in the twelfth century. He made many observations and experiments on the effects of refraction at the surface between air and water, air and glass, and water and glass, from which he deduced that atmospherical refraction increases the altitudes of all objects in the heavens. He also first observed that the stars are sometimes seen above the horizon by means of refraction, when they are really below it; an observation confirmed by Vitellio and other opticians. He likewise maintained that refraction contracts the diameters and distances of heavenly bodies, and that it is the cause of the twinkling of the stars. Besides, Alhazen treats largely on the magnifying power of glasses, so that probably his observations led to the invention of spectacles. In the next century followed Vitellio, a Pole, who digested the contents of Alhazen's work, and made many additional observations on the power of refraction. He gave a table of the results of his experiments on the refracting power of air, water, and glass, corresponding to different angles of incidence. Roger Bacon, a contemporary with Vitellio, also wrote on this science, and is generally considered to be the inventor of the magic lantern. Maurolycus, who followed these two at the distance of nearly two centuries, explains, in his treatise De Lumine et Umbrâ, the process of vision, showing that the crystalline humour of the eye is a lens which collects the rays of light issuing from the object

and throws them on the retina, where the focus of each pencil is formed. From this principle he discovered the reason why some people have a short sight and others a long one; also why the former are assisted by concave glasses, and the latter by convex ones. John Baptista Porta, his contemporary, discovered the camera obscura, and took the first public notice of the magic lantern, the original invention of which has been ascribed to Roger Bacon. Kircher, who followed Baptista, enlarged on his hints, and put them into execution. He also made many experiments with the camera obscura, by which he satisfied himself that vision is performed by the intromission of something into the eye, and not by visual rays proceeding from it, as had been formerly imagined. He considered the eye as a camera obscura, the pupil to be the hole in the window shutter, and the crystalline humour to correspond to the wall which receives the images; but in this latter point his idea has been proved, by closer observations, to be incorrect, for it is now known that this office is performed by the retina. The observations and experiments of this writer on the science of optics, and on the nature of vision, appear to have led the way to the discovery of telescopes, which was doubtless made very soon after his time. After this the writers on optics became very numerous, and their labours contributed to the confirmation and improvement of those who had preceded them.

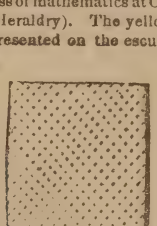
OPSIOMETER. An instrument for measuring the extent of distinct vision in different persons.

OPTIMISM. The doctrine that everything is ordered for the best.

OPTOMETER. In optics, an instrument for measuring the limits of distinct vision.

OPTIME. In England, a scholar in the first class of mathematics at Cambridge.

OR (in Heraldry). The yellow or gold colour, represented on the escutcheon by small dots.

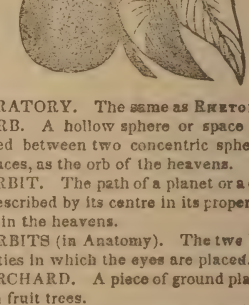


ORA. A Saxon coin, equal to from 16*d.* to 20*d.*, or about 40 cents.

ORACLES (among the Heathens) Ambiguous answers, which the priests pretended to deliver by the inspiration of their gods, such as the oracles of Apollo at Delphi, and those of Jupiter Ammon in Thebes.

ORANG-OUTANG. One of the tailless species of ape, which the most resembles man in its figure.

ORANGE-TREE. An evergreen, resembling the laurel in its leaf. It is a native of warm climates, and yields a well known juicy fruit of the same name.



ORATORY. The same as Rhetoric.

ORB. A hollow sphere or space contained between two concentric spherical surfaces, as the orb of the heavens.

ORBIT. The path of a planet or a comet described by its centre in its proper motion in the heavens.

ORBITS (in Anatomy). The two large cavities in which the eyes are placed.

ORCHARD. A piece of ground planted with fruit trees.

ORCHESTRA. The stage or middle of the theatre among the Greeks, where the chorus used to dance, and the performers used to sit. It is now the place set apart for the musicians, as the front of the stage in a theatre, a gallery in an assembly-room, &c.

ORCHIDEÆ. One of Linnæus's natural orders of plants, containing the orchis and other flowers allied to it

ORDEAL. A Saxon mode of trial, which consisted in trying the guilt or innocence of persons by appeals to Heaven, as in the ordeal by fire, when the party accused undertook to walk blindfold between nine red-hot ploughshares; and if he or she escaped unhurt, it was looked upon as a proof of innocence; so, in the ordeal by water, when a person was thrown bound into a river, or put his hands or feet into scalding water, and the like.

ORDER (in Military Affairs), as Order of Battle, the disposition of troops for battle; open order, close order, &c.; also in the sense of command, as the commander in chief's orders, which issue immediately from the commander in chief's office; so brigade orders, general orders, standing orders, &c.

ORDER (in Naval Affairs) Command, as sailing orders, &c.

ORDER (in Natural History). A particular division of animals, plants, or minerals, comprehended under a class in the Linnæan and other systems.

ORDER (in Architecture). The rule of proportion to be observed in the construction of any building, which is applied mostly to the column and the entablature, from the diversity in which have sprung the five several orders—the Doric, Ionic, Corinthian, Tuscan, and Composite.

ORDER (in Geometry). A rank or situation in a series of curves, lines, &c.; thus the first order of curve lines is expressed by a simple equation, or the first power; those of the second order, by a quadratic equation, or the second power; and so on.

ORDERS (in Law). In England, rules made by the court in causes there depending. These orders are made by different courts, as the Chancery, King's Bench, &c.; and also, on particular occasions, orders are made by magistrates at the Sessions

ORDERS (in Ecclesiastical Affairs). Congregations or societies of religious persons, who bind themselves by a vow to live under a superior, according to certain rules prescribed to them by their founder, such as the monks and nuns in the Romish church; likewise the character and office by which ecclesiastics are distinguished, that are set apart for the ministry. Since the Reformation, there are three orders of the clergy acknowledged in England, namely, bishops, priests, and deacons; whence the phrase, 'to be in orders,' is the same as to be of the clerical order.

ORDERS OF KNIGHTHOOD (in Heraldry) Societies of knights instituted by princes, as marks of distinction for such as have distinguished themselves in war The British orders are the order of the Garter, and the order of the Bath, belonging to England; the Irish order of St. Patrick; and the Scotch order of the Thistle.

ORDINANCE A law or decree.

ORDINARY (in the Common Law). In England, one who has ordinary, or exempt and immediate jurisdiction in causes ecclesiastical, as an archbishop or a bishop. The ordinary in Newgate is the clergyman who attends in ordinary upon condemned malefactors; also a term for the officers and servants of the king's household who attend on common occasions, as physicians in ordinary.

ORDINARY (in the Navy). The establishment of persons employed by government to take charge of the ships of war which are laid up in the harbours.

ORDINARY (in Heraldry). Any charge in coats of arms which is proper to the art, and in ordinary use therein; as the chief, pale, bend, fesse, bar, chevron, cross, and saltire, in distinction from the common charges, or such things as it has in common with the other arts, as animals, implements, crosses, &c.

ORDINATES (in Conic Sections). Geometrical lines drawn parallel to each other, and cutting the curve in a certain number of points.

ORDINATION (in Ecclesiastical Affairs). The act of ordaining, or putting into holy orders. The age of ordination for a deacon, in England, is twenty-three, and for a priest twenty-four.

ORDNANCE. A general name for all sorts of great guns.

ORDNANCE, Office of An office kept within the Tower of London, which superintends and disposes of all the arms and implements of war

ORE. A general name for metals in an unrefined state, as they are dug out of the earth, where they are found in the four following states: namely, 1. Pure, that is, by themselves, in a pure metallic state, or as alloys, in combination with other metals. 2. As sulphurets, or in combination with sulphur. 3. As oxides, or in combination with oxygen: and 4. As salts, that is, in combination with acids.

ORGAN (in Physiology). An instrument by which any natural faculty in an animal body is exercised, as the ear, which is the organ of hearing; the eye, which is the organ of sight.

ORGAN (in Music). A wind instrument blown by bellows, and containing

numerous pipes of various kinds and dimensions, which, for its solemnity, grandeur, and rich volume of tone, is peculiarly fitted for the purpose for which it is commonly employed. Organs are sometimes of an immense size: the organ in the cathedral church at Ulm, in Germany, is said to be 93 feet high and 28 broad, its largest pipe being 13 inches in diameter, and it having sixteen pair of bellows.

This organ is exceeded in size by the one constructed in 1870 for the Royal Albert Hall, in London, which has 111 complete registers and 138 draw-stops.

ORGANOGRAPHY. In botany, a description of the organs or structure of plants.

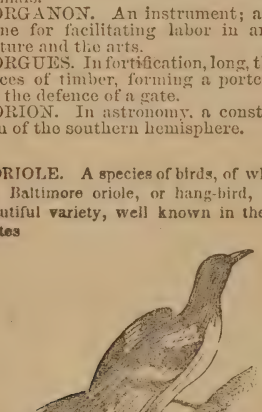
ORGANOLOGY. In botany, that branch of physiology which treats in particular of the different organs of animals.

ORGANON. An instrument; a machine for facilitating labor in architecture and the arts.

ORGUES. In fortification, long, thick pieces of timber, forming a portcullis for the defence of a gate.

ORION. In astronomy, a constellation of the southern hemisphere.

ORIOLE. A species of birds, of which the Baltimore oriole, or hang-bird, is a beautiful variety, well known in the U. States



ORION. A constellation in the southern hemisphere, containing from thirty-eight to seventy-eight stars, according to different writers.

ORNAMENTS (in Architecture). Leaves, roses, channellings, and the like, which ornament the different parts of a column.

ORNITHOLOGY. That branch of Natural History which treats of Birds, and their natures, habits, form, economy, and uses. Birds, in the Linnæan system, are divided, under the class Aves, into six orders, according to the form of their bills: as the Accipitres, including the eagle, vulture, hawk, &c.; Picæ, including the crow, jackdaw, parrot, &c.; Anseres, including the duck, goose, swan, gull, &c.; Grallæ, as the heron, woodcock, ostrich, &c.; Gallinæ, including the peacock, pheasant, turkey, domestic fowl, &c.; Passeres, including the sparrow, lark, swallow, &c.

ORNITHOLOGY, History of. The only scientific writers on the subject of birds among the ancients were Aristotle and Pliny. The former of these writers speaks of the different kinds of food adapted to the different species, of which he gives an imperfect nomenclature, and adds some remarks on their various periods of building their nests. Pliny's remarks on birds are very desultory, and not very extended. The first writer among the moderns, who has treated of birds methodically, is Peter Belon, who has classed them principally according to their food and habitation. He has likewise added many observations on their external form and character. Conrad Gesner, his cotemporary, has displayed much learning in his work, having given alphabetical tables of the names of birds in Hebrew, Chaldee, Arabic, Greek, and Latin, and numerous references to the writers from whom he collected his materials. Aldrovandus, the celebrated naturalist, followed in the steps of Belon and Gesner, and added much to their store of learning and research; at the same time illustrating the subject with numerous wood cuts. The next ornithologists of any distinction, after these three, were Willoughby and Ray, the latter of whom published the works of the former, as friend, with many additions of his own, in 1678. In this work, the external and internal structure of birds is described. Jacob Theodore Klein, in his History of Birds, divides them into families orders, and tribes; the families distinguished according to their feet the orders by the form of the bill, and the tribes by the form of the head, &c. In the systematic arrangement of Moehring, the classes, orders, and genera of birds are distinguished by the form of the feet and bill. The system of Linnæus, which follows here in order of time, is dated from the year 1766. It is formed from the manners and habits of the birds, as well as their external form (see Zoology). Brisson, in his system of Ornithology, has distributed birds into twenty-six orders, from the form of the bill and feet, &c., including under these one hundred and fifteen genera, and thirteen hundred species. The work, which is in six volumes 4to., is illustrated with more

than two hundred and twenty excellent engravings. The work of Buffon, though popular, has but few claims to notice in a scientific point of view. Mr. Pennant, in his distribution of birds, prefers Ray to Linnæus; but Mr. Latham, in his Synopsis of Birds, adheres to the latter with very few exceptions, as does also Mr. Shaw, in his General Zoology

Among the writers who have treated of the birds of particular places, the most distinguished are Juan Hernandez on the birds of Mexico, Marcgrave on the birds of Brazil, Sir Hans Sloane on the birds of Jamaica, Mr. Mark Catesby on the birds of Carolina, Florida, &c., Schwenckfel on those of Siberia, Brunnick on those of Denmark, Sonnerat on those of New Guinea, Frisch on those of Germany, Vaillant on those of the Cape, and Edwards on those of the West Indies. Wilson's Ornithology of the U States deservedly places him among the first writers on this subject.

ORNITHORUNCUS PARADOXUS. A singular quadruped from New South Wales, not yet properly classed in the Linnæan system. Its great peculiarity is that the structure of its head, externally and internally, bears a greater resemblance to that of a duck than to that of any animal of the mammalia tribe.

ORPHAN. One bereaved of either father or mother, or of both parents.

ORPIMENT. A fine yellow powder; a mineral composed of sulphur and arsenic; one of the ores of arsenic.

ORRERY. An astronomical instrument for exhibiting the several motions of the heavenly bodies. The first machine of this kind was constructed by Mr. Graham, but it derives its name from the Earl of Orrery, for whom one was made by Mr. Rowley; and Sir Richard Steele supposing this to be the first ever constructed, he gave it the above name in honour of the earl. Orreries are constructed so as to be more or less complete. That given in the accompanying figure has all the planets represented upon it; that is to say, the sun, placed in the centre of the solar system; next to the sun is the orbit of Mercury; and next to that, the orbit of Venus. Next to the orbit of Venus, is the orbit of our earth, represented by a silver plate, on which the signs of the Zodiac, the degrees of the ecliptic, and the days of each month are drawn; and the earth is represented by an ivory ball placed upon an axis so as to make an angle with the plane of the horizon of 66 degrees and a half. About the ivory ball there is a silver circle which is placed so as to incline to the earth's orbit in an angle of 8 degrees: this represents the orbit of the moon, the moon itself being represented by a silver ball. The superior planets are Mars, Jupiter, and Saturn, in this order: Mars stands next without our earth; next to that, Jupiter; and outermost of all, Saturn. By the handle, the revolutions of these planets are represented. While the earth is carried round the sun by 365 turns and a quarter, of the handle, Mercury is carried round the sun in 88 turns, and Venus in 224; which represents that the length of the year in Mercury is 88 of our days, and the length of the year in Venus is equal to 224 of our days. Mars performs his revolution about the sun in 687 turns of the handle, Jupiter in 4332 turns, which answers to 4332 revolutions of our earth about its own axis; and last of all, Saturn, in 10759 turns, completes his revolution, which is the length of the Saturnian year, and is equal to about 30 of our years.

ORTHODROMICS. The art of sailing in the arc of a great circle.

ORTHOEPY. Correct enunciation.

ORTHOGRAPHIC PROJECTION OF THE SPHERE. That projection which is made upon a plane passing through the middle of the sphere, by an eye placed vertically at an infinite distance.

ORTHOGRAPHY. That part of grammar which teaches the nature and affections of letters, and the proper spelling or writing of words.

ORTHOGRAPHY (in Geometry). The art of drawing or delineating the fore right plan of any object, and of expressing the heights or elevations of each part; so called from its determining things by perpendicular lines falling on the geometrical plan.

ORTHOGRAPHY (in Architecture)

The elevation or representation of the front of a building.

ORTOLAN. A delicate bird of the bunting tribe, which visits England before the setting in of frost and snow.

ORYCTOLOGY. The science of organic remains

OSCILLATION. The vibration of a clock.

OSCULATION. The contact between any curve and its osculatory circle.

OSIER. The red water-willow, of which wicker baskets are made.

OSIRIS. An Egyptian deity

OSPREY. The fish hawk, common in Europe and America.

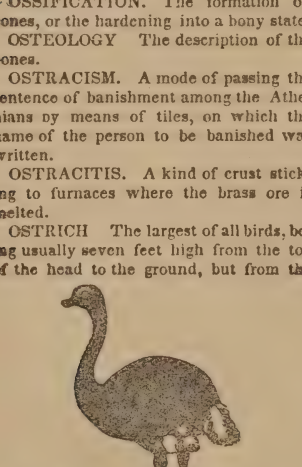
OSSIFICATION. The formation of bones, or the hardening into a bony state.

OSTEOLOGY The description of the bones.

OSTRACISM. A mode of passing the sentence of banishment among the Athenians by means of tiles, on which the name of the person to be banished was written.

OSTRACITIS. A kind of crust sticking to furnaces where the brass ore is melted.

OSTRICH The largest of all birds, being usually seven feet high from the top of the head to the ground, but from the



back only four It is a native of Africa and Arabia, and lays forty or fifty eggs, which are as large as the head of a calf. There are three birds allied to the ostrich which are sometimes confounded with it, the cassowary of the Asiatic Islands, the emeu of New Holland, and the rhea of Patagonia.

OTTER. A sagacious animal, that inhabits the banks of rivers, and feeds principally on fish. Its fur is much esteemed. It is fierce and crafty when attacked, but may easily be tamed when young, and taught to catch fish. The sea otter, which inhabits the northern seas, is the largest of the species.

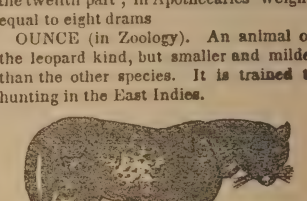
OVAL. An oblong curvilinear figure, in the shape of an egg. The mathematical oval, which is a regular figure, equally broad at each end, is called an ellipsis.

OVERSEERS (in Law). Parish officers who take charge of the poor that receive parish relief.

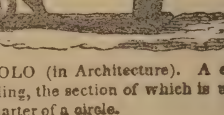
OVERT ACT (in Law). A plain and open matter of fact, serving to prove a design

OUNCE. In Avoirdupois weight, the sixteenth part of a pound; in Troy weight, the twelfth part; in Apothecaries' weight, equal to eight drams

OUNCE (in Zoology). An animal of the leopard kind, but smaller and milder than the other species. It is trained to hunting in the East Indies.



OVOLO (in Architecture). A convex moulding, the section of which is usually the quarter of a circle.



OVULE, OR OVULUM. In botany, the seed before it is perfect.

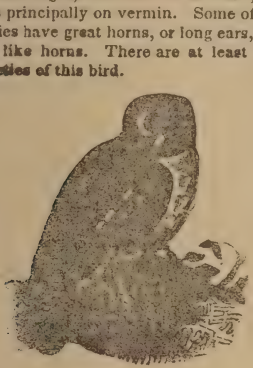
tection. Outlaws were anciently called Friendless Men, no one being permitted to take them in, or afford them any relief.

OUTRE. Extravagant, out of the way.

OUTRIDERS. Servants attached to any travelling equipage, who ride forward for the purpose of paying the tolls, &c.

OUTWORKS. Works made on the outside of the ditch in a fortress

OWL. A bird which, on account of its weak sight, flies about in the dark, and lives principally on vermin. Some of the species have great horns, or long ears, that look like horns. There are at least fifty varieties of this bird.



OX. A well known domestic animal, of which there are several varieties, as the Abyssinian ox, having the horns pendulous, adhering only to the skin, and the African ox, having the body snowy, and hoofs black, &c.

OXALIC ACID. An acid extracted from wood-sorrel, and also from sugar combined with potash. It forms the juice sold under the name of Salt of Lemons, which is used for taking out ink spots. Oxalic acid is a violent poison, and has in some cases been taken by mistake for Epsom salts.

OXIDATION, or OXYDIZEMENT The process of converting metals or other substances into oxides, by combining with them a certain portion of oxygen.

OXIDES, or OXYDES. Substances combined with oxygen, without being in the state of an acid.

OXYGEN. One of the constituent and essential parts of atmospheric or common air, which is necessary to the support of life and combustion. In its gaseous state, it is a colourless and aerial fluid. Oxygen forms about a fifth of our atmosphere, and exists in most vegetable and animal products, acids, salts, and oxides.

OXYMEL. A sirup made of honey vinegar, and water, boiled together.

OYER AND TERMINER (in Law) A court to hear and determine all treasons felonies, and misdemeanours.

O YES (in Law). Corrupted from the French 'oyez, hear ye,' the expression used by the crier of a court, in order to enjoin silence when any proclamation is made.

OYSTER. A shell-fish which abounds on the coast of England and the U. States, and is much esteemed as food. In the East Indies, the oysters grow to an extraordinary size, some of the shells being two feet in width; and it is said that, on the coast of Coromandel, an oyster will furnish a meal for several men. At the same time, it is universally agreed, that this large sort falls very far short of the European and American oyster, in delicacy of flavour. The English oyster has a strong copper taste, which at first is very disagreeable.

## P.

P, the fifteenth letter of the alphabet, stands as an abbreviation, in Music, for piano; in Astronomy, for post, as P. M., Post Meridiem, after noon; among physicians, for partes, as P. Æ. Partes Æquales, &c.; in Law, for parliament, as M. P. Member of Parliament.

PACE. A measure of two feet and a half; with Geometricians, five feet

PACHA. The chief admiral in the Turkish marine.

PACIFICATION. A negotiation for peace; as Edict of Pacification is a decree published by a prince for the pacifying all parties

PACA. A small animal of S. Amer., dark-brown color spotted with white.

PACHYDERMS. Animals distinguished by thickness of their skins, or having hoofs, as the elephant and horse.

PADDLE. A sort of oar

PADDOCK. A small enclosed meadow attached to a dwelling.

PADLOCK. A kind of lock to hang on the outside of a door.

PAGANS. Those who adhered to idolatry after the establishment of Christianity; idolaters, or the worshippers of false gods.

PAGE. In Europe, a youth retained

as an honourable attendant on a prince, to bear up trains, robes, &c.

PAGODA. A Chinese or Hindoo temple; also an Indian coin worth about $2.

PAINS AND PENALTIES. In England, an act of parliament to inflict pains and penalties, beyond or contrary to the common law, in the particular cases of great public offenders.

PAINTED LADY A beautifully variegated pea.

PAINTER. An artist who represents objects by colours, as a portrait painter; also an artisan who lays colours on wood or stone, &c., as a house painter. The company of painters in London is of great antiquity, but was not incorporated before the reign of Elizabeth.

PAINTER (a Sea Term) A rope for hauling a boat on shore.

PAINTER-STAINER. A painter of coats of arms. They were incorporated with the painters.

PAINTING. The art of representing all objects of nature by lines and colours on a plain surface. In the exercise of this art, the powers of imagination, imitation, and invention, are required for making a choice of the subject, and of the several figures and subordinate parts of a picture, which are comprehended under the name of design. In the execution of the work, there is likewise required a due regard to the effects of light and shade, and colours, which is termed composition; and also a nice choice of the colours to be employed, which is known by the name of colouring. Painting, as regards the subjects, is distinguished into historical painting, portrait painting, landscape painting, &c.; as regards the form and the materials, into painting in oil, water colours, fresco, miniature, distemper, mosaic, &c.

PAINTING, History of. It is to be supposed that painting was among the earliest efforts of human ingenuity, for the love of imitation would naturally suggest the idea of representing the surrounding objects which engaged the attention and interested the affections. Thus it is that the savages painted their own bodies, by means of puncturing the skin, and infusing different colours into the punctures, and that they painted on their shields different figures according to the fancy of the bearer. So, likewise, we find that the Mexicans were in the habit of representing their warlike exploits by means of picture-writing, which was something similar to the hieroglyphics of the Egyptians, that served to represent sacred objects for religious purposes The first step beyond the rude outline was an attempt to complete the imitation by applying colours, which at first was effected by covering the different parts of the figure with different colours, after the manner of our coloured maps, as was done by the Egyptians, and is still practised by the Indians and Chinese.

Painting was partially cultivated by the Egyptians, but was not carried to any perfection, because they principally employed themselves in the representation of the monstrous objects of their worship, rather than in depicturing natural or real objects in consequence, their natural figures were very stiff and unseemly, the legs being drawn together, and the arms pasted to the sides, like the mummies which they copied. Their painters were likewise very much employed on earthen vessels or drinking cups, or in ornamenting barges, and covering with figures the chests of mummies. Pliny also informs us that the Egyptians painted the precious metals, which doubtless consisted in covering gold or silver with a single colour. The Persians, as well as the Arabians, had some idea of mosaic; but the art was cultivated by those people principally for domestic purposes. Among the Indians, painting is confined principally to the representation of their idols and monstrous objects of worship; but the painters of Thibet are remarkable for the delicacy of their strokes, in which they might vie with the Greeks, although deficient in every other particular. The Chinese are remarkable for the brightness of their colours, but this is the only perfection they can boast of. Their figures are as unlike nature as possible, devoid of expression and of proportion. The Etrurians were the first people who appear to have excelled in this art. Many specimens of Etruscan painting have been preserved, which consist of long painted frizes, and pilasters adorned with huge figures. The paintings are executed on a ground of thick mortar, and many of them are said to be in a high state of preservation. There are likewise many Campanian vases extant, which are wonderful proofs of the perfection of the art at a very early period among these people. As to the origin of painting among the Greeks, it is not easy to define the period of its commencement. The Greeks themselves, according to Pliny, speak of Polygnote as their first painter of eminence, who flourished in the 90th Olympiad, or 424 years before Christ. That painting in dry colours existed in the time of Homer, is cer-

lain from several descriptions to be found in his Iliad and Odyssey; from the same source we also learn that they were then acquainted with basso relievo, of which the buckler of Achilles was a specimen Polygnote was followed by Xeuxis and Parrhasius, whose skill in imitation is said to have been such, that the first deceived the birds by painting cherries so exactly, and the latter deceived his rival. Apelles, Protogenes, and Euphranor contributed to raise the art to its highest perfection.

The Romans derived their skill in painting from Etruria; but the art remained very long neglected, while the people were engaged in conquests, and struggles for liberty. From the building of the city to the time of the emperors, there is mention only of two who excelled in painting, namely, Fabius, surnamed Pictor, and Pacivius, the nephew of the tragic poet Ennius. In the time of the emperors, painting, as well as the other arts, flourished. A colossean figure, 120 feet long, was painted by order of the emperor Nero, which is the first painting on cloth mentioned among the ancients.

The artists who painted movable pictures were superior to those who painted on ceilings, or compartments of buildings. They painted their movable pictures on the wood of the fir, larch, or box; or on canvass, as above-mentioned. The old Greek and Roman paintings on walls are supposed to have been done in distemper or in fresco: they made use of oil in varnishing, for the preservation of their paintings, but they do not appear to have expressly used it in their colours.

After an interval, during which all the arts languished, imperfect efforts were made to represent religious subjects, which paved the way for the revival of painting in the thirteenth century. A noble Florentine, named Cimabuc, first learned the art from a Greek, and cultivated it with success, so that he may be reckoned the founder of the Florentine school, of which Michael Angelo was the great ornament. Raphael was the founder of the Roman school; Titian, that of Venice. Corregio was the father and greatest ornament of the Lombard school, but the Caracci, Lewis, Augustin, and Hannibal, who were natives of Bologna, also formed a school, which has been called the second Lombard school.

Among the French, miniature painting, and painting on glass, were cultivated at an early period; but other branches of the art were at a low ebb until the age of Louis XIII., when Poussin arrived at such eminence as to be called the Raphael of France; but he had no pupils, nor any influence in forming the French school, the honour of which was divided between Vouet, who laid the foundation, and Le Brun, who raised the edifice. The Germans have never cultivated painting so as to form a school, but Albert Durer and John Holbein have secured this nation from being forgotten in a history of painting. The Flemish school is remarkable for having introduced oil painting, which was first attempted, or at least brought into general practice, by John de Bruges; but the master of the art was Rubens, the founder of the Flemish school. The Dutch have distinguished themselves in miniature painting, of which Rembrandt was their great master, and also as history painters, among whom Lucas, of Leyden, holds the first rank, and may be considered as the founder of the Dutch school The English school is comparatively of modern date, and owns Sir Joshua Reynolds as its founder. It is principally known by its correct observance of the great masters of the Italian and Flemish schools.

PALACE. A royal dwelling, so called from the Mount Palatine in Rome, where stood the royal mansion.

PALÆOGRAPHY. A description of ancient writings, inscriptions, characters &c.

PALÆSTRA. A building where the Grecian youth exercised themselves in wrestling, running, quoits, &c.

PALANQUIN. An Indian covered chair, borne on men's shoulders.

PALATE. The roof of the mouth, and organ of taste.

PALATINE. Invested with regal prerogatives, as the counties palatine of Lancaster, Chester, and Durham, in England, which have particular jurisdictions.

PALE (in Heraldry). One of the honourable ordinaries in a coat of arms resembling a palisado, used in fortifications.

PALE. A flat, pointed stake or board which is used in making enclosures

PALISADE. A finer kind of paling in gardens.

PALISADOES, or PALISADES (in Fortification). An enclosure of stakes, used to fortify the avenues of open forts, &c. They were sometimes so ordered, that they would turn up and down as occasion required, and might be hidden from the view of the enemy until he came to the attack.

PALLADIUM. A sort of metal drawn from crude platina.

PALLAS. A small, newly discovered planet, situated between the orbits of Mars and Jupiter.

PALLET. A painter's colour board.

PALLET (among Gilders). A tool for taking up the gold leaf.

PALLET (among Mariners) A partition in a hold.

PALLET (in Heraldry). The diminutive of the pale, being one half of its breadth.

PALLET-BED. A small, low bed.

PALLETS. Levers in clocks and watches, connected with the pendulum or balance, which receive the immediate impulse of the wheel.

PALL-MALL. An ancient game, in which an iron ball was struck with a mallet through a ring or arch of iron, as was once practised in St. James's Park, and gave its name to the street called Pall-Mall, pronounced Pell-Mell.

PALM. A tree of different kinds, the branches of which were carried in token of victory. The cocoa-nut tree. date tree, bread-fruit tree, and many others, are varieties of the Palm. Some of these varieties are found in nearly all tropical climates.

PALM (in Commerce). A measure of three inches.

PALM. A sea term for the broad part of an anchor.

PALM (in Anatomy). The inner part of the hand.

PALMÆ. Palms; one of the seven families into which Linnæus divided the vegetable kingdom, including such trees and shrubs with simple stems as bear leaves resembling those of the ferns.

PALMER. A pilgrim bearing a staff.

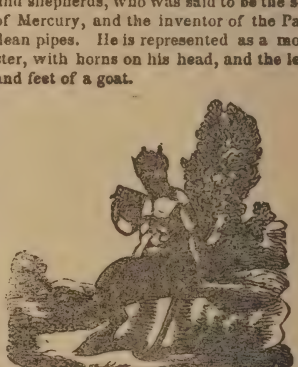
PALMISTRY. A mode of telling fortunes by the lines of the hand.

PALM SUNDAY. The sixth Sunday in Lent, the next before Easter, commemorative of our Saviour's triumphal entrance into Jerusalem, when palm branches were strewed in the way.

PALM WORM. A poisonous insect of America. This insect is extremely swift in its motions.

PALSY, or PARALYSIS. A privation of motion or sense of feeling; a nervous disorder arising from an affection of the cerebellum.

PAN. The god of mountains, woods, and shepherds, who was said to be the son of Mercury, and the inventor of the Pandean pipes. He is represented as a monster, with horns on his head, and the legs and feet of a goat.



PANACEA. A universal remedy for the cure of all disorders.

PANADA. Bread pap.

PANATHENÆA. A festival celebrated at Athens in honour of Minerva.

PANCRATIUM. An exercise among the ancients, which consisted in wrestling, boxing, and kicking at the same time.

PANCREAS (in Anatomy). A flat glandular viscus of the abdomen; in animals called the sweetbread.

PANCREATIC. Belonging to the pancreas, as the pancreatic duct and juice.

PANDECTS. The name of a volume of the civil law, digested by order of the emperor Justinian.

PANDORA. The first woman, according to the poets, made by Jupiter. She presented her husband Epimetheus with a box, the gift of Jupiter, and on his opening it, there flew out all kinds of evils on the earth.

PANE. A square of glass

PANEGYRIC. A set speech among the ancients in praise of any one, in the Greek Church, a book of praises of Jesus Christ and the saints.

PANEL, or PANNEL. A schedule or roll of parchment on which are written the names of the jurors returned by the sheriff.

PANICLE (in Botany). A sort of inflorescence or flowering, in which the flowers and fruits are scattered on pedun-

cies variously subdivided, as in oats, and some grasses

PANNADE. The curvetting or prancing of a mettlesome horse.

PANNAGE. The feeding of swine upon mast in woods.

PANNEL (among Joiners). A square piece of wood grooved in a larger or thicker piece, as in wainscots, &c.

PANNEL (among Masons). One of the faces of a hewn stone.

PANNEL (in the Manege). A saddle used in carrying burdens.

PANNEL (in the Scotch Law) The prisoner at the bar.

PANNIER. A basket for carrying bread on horseback.

PANORAMA. A circular picture on a large scale, fixed around a room particularly constructed for the purpose.

PANOPLY. Complete armour

PANTALOONS. A garment consisting of breeches and stockings of the same stuff fastened together.

PANTHEON. A temple at Rome, dedicated to all the heathen deities; a book containing an account of all the heathen gods and goddesses, &c.

PANTHER. A fierce beast nearly allied to the tiger, a native of Africa. It is of a tawny yellow colour, marked with black spots. It has been generally supposed to be untameable, but Mrs. Bowditch has given an account of a recent instance in which a panther became so gentle as to go at large among the people.

PANTOMIME (among the Ancients) Antic dances and mimic gestures; among the Moderns, a sort of drama represented by gestures, actions, and various kinds of tricks performed by Harloqnin and Columbine as the hero and heroine, assisted by Pantaloon and his clown.

PANTRY. A bread closet, or, properly, a small room in which the daily provisions of the table are kept.

PAPAL CROWN. The pope's tiara or crown, otherwise called the Triple Crown, because it is a cap of silk environed with three crowns of gold, as in the subjoined figure.

PAPER. A vegetable substance manufactured so as to be fit for writing upon. The Egyptian paper was made of the rush papyrus, which gave its name to the substance. Paper is likewise made of bark or the inner rind of trees, of cotton and other materials, but more particularly of linen and other rags prepared by a particular process at the paper mills. Paper is distinguished as to its use into writing paper, printing paper, drawing paper, cartridge paper, copy, chancery, &c.; as to its size into pot, foolscap, crown, demy, medium, royal, imperial, &c

PAPER (among Bankers.) A name given to money of credit by means of any written paper, as bills of exchange, promissory notes, &c.

PAPER CURRENCY, or PAPER MONEY. A substitute for coin issued on the credit of government in the shape of notes. On Nov. 1, 1878, there were outstanding in the U. S., including national-bank and legal-tender notes, $666,383,137.

PAPIER MACHE. A substance made of paper boiled into a paste, of which toys are formed.

PAPILIONACEÆ (in Botany). One of Linnæus's natural orders of plants, consisting of such as have papilionaceous or butterfly-shaped flowers, as the pea, &c.

PAPIST. One professing the Roman Catholic religion. Severe laws were made in England, after the Reformation, against the Papists, as they were technically termed, but they have since been repealed, as the necessity for them ceased.

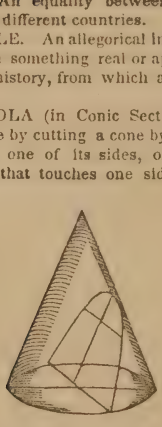
PAPYRUS. An Egyptian reed grass, the leaves of which were made into paper It grows in the marshes of Egypt, or in the stagnant places of the Nile Its roots are tortuous, and in thickness about four or five inches; its stem, which is triangular and tapering, rises to the height of ten

subits and carries a top or plume of small hairs.

PAR An equality between the exchanges of different countries.

PARABLE. An allegorical instruction, founded on something real or apparent in nature or history, from which a moral is drawn.

PARABOLA (in Conic Sections). A curve made by cutting a cone by a plane, parallel to one of its sides, or parallel to aplane that touches one side of the cone.



PARACHUTE. An instrument in the shape of an umbrella, which serves to break the fall in descending from an air balloon.

PARADE. The place where troops draw up, to do duty and mount guard.

PARADIGM (in Grammar). An example of a Greek or Hebrew verb, conjugated through all its moods and tenses.

PARADISE. The garden of Eden, where Adam and Eve dwelt in their state of innocence.

PARADISE, Bird of. A bird of a beautiful plumage, that chiefly inhabits the Asiatic islands. Its feathers are much used as ornaments for the head among the Japanese, Chinese, and Persians, from whom they are obtained, and imported into Europe. Its name was given it by the sailors, who, seeing it on the wing, far out to sea, fancifully imagined it to be an inhabitant of the air, and not of the land.

PARADISE, Grains of. The hot berries or seeds of the cardamum.

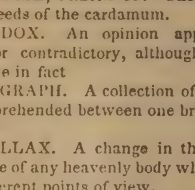
PARADOX. An opinion apparently absurd or contradictory, although sometimes true in fact

PARAGRAPH. A collection of sentences comprehended between one break and another.

PARALLAX. A change in the apparent place of any heavenly body when seen from different points of view.

PARALLEL (in Mathematics). The name for lines, surfaces, or bodies everywhere at an equal distance from each other

PARALLELOGRAM. A plane figure, bounded by four right lines, whereof the opposite are parallel and equal to one another.



PARALLEL SPHERE (in Astronomy). The situation of the sphere when the equator coincides with the horizon, and the poles with the zenith and nadir.

PARALYSIS. The palsy.

PARAPET. A wall breast high, that serves to hide the roof of a house.

PARAPHRASE. An explanation of any text in plainer and more ample terms.

PARASANG. A Persian measure equal to from 30 to 50 stadia or furlongs.

PARASELENE. A mock moon, or a meteor in the form of a luminous ring round the moon.

PARASITE (among the Ancients). A guest invited by the priest to eat of the sacrifice; a trencher friend, or hanger on at the tables of the great, who lives by flattery

PARASITICAL PLANTS. Such

grow upon others, like the moss or misseltoe

PARASOL. A little movable machine, or small umbrella, fitted for keeping off the sun.

PARCÆ, the Fates. Three sisters among the heathens, who presided over, or spun the lives of men; Clotho held the distaff and spun the thread, Lachesis turned the wheel, and Atropos cut the thread.

PARCHMENT. The skin of sheep or goats, prepared for writing upon.

PARDON (in Law). The remitting the punishment for any felony committed against the law

PARENTHESIS (in Grammar). A clause inserted in the middle of a sentence, and marked thus [], or thus ().

PARHELION. A mock sun.

PARIAN MARBLE. A sort of white marble, so called from the island of Paros, where it was first found

PARIS. The son of Priam, king of Troy, who, carrying away Helen, the wife of Menelaus, was the author of the Trojan war.

PARIS, Plaster of. A composition of lime and sulphuric acid, used in making casts and moulds.

PARAMOS. A name given by the Spanish settlers to the high desert tracts of the Andes of South America, covered with stunted trees.

PARSEE. One of the Persian refugees driven out of their own country by the Mohammedans, now living in various parts of India.

PARSEEISM. Fire-worship, the religion of the Parsees.

PARTHENOPE. In ancient mythology, one of the sirens, who threw herself into the sea, because she was unable to beguile Ulysses by her songs.

PARTHENOPE. One of the newly-discovered planets, first observed by De Gasparis in 1850. Its mean distance from the sun is 233,610,000 miles; and its periodical revolution 3 years, 306 days.

PARK (among Fishermen). A large net disposed on the bank of the sea.

PARLIAMENT. In England, the great council of the nation, consisting of the King, Lords, and Commons, which forms the legislative branch of the English government or constitution. The parliament is assembled annually by summons from the crown, to make laws, impose taxes, and deliberate on other public affairs, either of domestic or foreign policy. The Parliament is also styled the High Court of Parliament, because the upper house assists in the administration as well as in the making of laws

PARMESAN. A sort of cheese made at Parma in Italy

PARNASSUS. A mountain of Phocis in Greece, on which stood the temple and town of Delphi. It was sacred to Apollo and the Muses

PARODY. A poetical pleasantry, which consists in applying the verses of some person, by way of ridicule, to another object, or in turning a serious work into burlesque, by affecting to observe the same rhymes, words, and cadences.

PAROL (in Law). By word of mouth, as parol evidence.

PAROLE (in Military Affairs) Word of honour, a promise given by a prisoner of war, when suffered to be at large, that he will return at a time appointed.

PARRICIDE. A murderer of father or mother.

PARROQUET. A sort of parrot easily taught to speak. It inhabits tropical regions; one species is found in the Southern States

PARROT. A noisy, imitative, gregarious kind of bird, of which there are at least fifty varieties. It is a native of the tropical climates, and easily tamed.

PARRYING (among Fencers). The warding a push or blow from an adversary.

PARSING (in Grammar) Expounding words and sentences so as to apply the rules of grammar to them

PARSLEY A potherb, and a perennial, which grows in gardens.

PARSNEP. An edible root

PARSON. In England, the person holding the office of rector or vicar in a parish.

PART (in Arithmetic) A quantity contained in a whole.

PART (in Music). A piece of the score or partition, written by itself, for the convenience of the musician

PART (in the Drama). The character or portion of a piece assigned to a performer.

PARTERRE. An open part of a garden in the front of a house, commonly ornamented with flowers.

PARTHENON. A temple at Athens, sacred to Minerva.

PARTICIPLE (in Grammar). One of the parts of speech, so called because it partakes both of the noun and the verb.

PARTICLE (in Physiology). A minute part of any body which enters into its composition.

PARTICLE (in Grammar). Small indeclinable words, that serve to unite or connect others together.

PARTIES (in Law). The persons named in a deed.

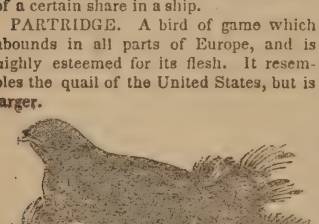
PARTING. Separating gold and silver by aquafortis.

PARTITION (in Law). Dividing lands or tenements among coheirs or partners.

PARTNER. One who joins with another in some concern or affair.

PART OWNERS. Partners possessed of a certain share in a ship.

PARTRIDGE. A bird of game which abounds in all parts of Europe, and is highly esteemed for its flesh. It resembles the quail of the United States, but is larger.



The bird called partridge in New England, and pheasant at the South, is a species of grouse.

PARTS OF SPEECH. The grammatical divisions of words according to their connexion with or dependence upon each other; they are commonly reckoned nine in number, namely, the article, noun, pronoun, verb, participle, adverb, conjunction preposition, and interjection

PARTY (in Military Affairs). A small detachment or number of men sent upon any particular duty, as a recruiting party, &c

PARTY (in Public Affairs). Any number of men combining together to follow their own particular views, either in politics or religion

PARTY-WALLS. Partitions of brick made between buildings separately occupied, to prevent the spreading of fire.

PASQUINADE. A short satirical libel that is generally stuck up to be read by the passers by.

PASS (in Military Affairs). A strait or narrow passage, which renders the entrance into a country difficult for an army.

PASS (among Miners). A frame of thin boards, set sloping for the ore to slide down.

PASS (in Fencing). A push or thrust at the adversary.

PASSAGE (in Music). A succession of sounds forming a member or phrase in a composition.

PASSAGE (in Military Affairs). The passing over bridges, mountains, &c.

PASSAGE (in Navigation). The course pursued at sea, particularly that which has been attempted to be taken by the north pole in going to India. This attempt has been made in two ways, namely, by coasting along the northern parts of Europe and Asia, called the north-east passage; and another by sailing round the northern part of the American continent, called the north west passage; besides which, an attempt has also been made to sail over the pole itself.

PASSENGER. Any one travelling by a coach, vessel, or other mode of conveyance; also any one passing by.

PASSERES. An order of birds in the Linnæan system, comprehending such as have the bill conic and pointed, as the pigeon, the lark, the thrush, &c.

PASSION WEEK The week immediately before Easter.

PASSIVE. Suffering, an epithet for verbs which express the suffering or being acted upon, as 'to be loved.'

PASSIVE PRINCIPLES (in Chymistry). Earth and water, so called because their parts are not so swiftly moved as those of spirits, oil, and salt.

PASSOVER. A festival of the Jews, commemorative of the angels passing the doors of the Israelites when they slew all the first born of the Egyptians.

PASSPORT, or Pass. In Europe, a license or letter from a prince or governor, granting liberty to a person to pass through the country.

PASSPORT (in Commerce). A license to export or import goods.

PASS WORD. A secret word or countersign which enables any person to go through military stations.

PASTE (in the Glass Trade). A kind of coloured glass made of calcined crystal, lead, and metallic preparations, so as to mitate gems.

PASTEBOARD. A thick kind of paper, formed of several sheets pasted one over the other.

PASTIL. A sweet ball or perfumed composition.

PASTIL (among Painters). A roll of paste made up of various colours, with gum; a crayon.

PASTORAL. A shepherd's song or poem, by way of dialogue between shepherds.

PASTURE LAND. Land reserved for the feeding of cattle.

PATENTS, or Letters Patent. In England, writings sealed with the great seal, authorizing a man to do or enjoy that which he could not of himself. In the United States, the term is applied to certificates issued from the patent office, which give to the inventor of any useful machine the exclusive advantage of his invention.

PATERNOSTER. The Lord's prayer; also the repetition of the Lord's prayer in the Romish church

PATHOLOGY. That branch of medicine which explains the symptoms of diseases.

PATHOS. An emotion which an orator displays in his speech or excites in his hearers.

PATIENT. One who is under the direction of a physician, for the cure of any disorder.

PATIENT (in Physiology). That which receives impressions from any other thing, called the agent.

PATRIARCH. The father or ruler of a family, such as Abraham, and the patriarchs of old.

PATRIARCH (in Ecclesiastical Affairs). In England, a bishop that is superior to an archbishop.

PATRIMONY (in Law). A right descended from ancestors.

PATRIOT. A father of his country.

PATROL. Any party going their rounds at stated hours, to see that the watchmen do their duty.

PATRON (in Law). In England, a friend of interest or power; he who has the disposal of a benefice.

PATRON. In England, a sea term for one who commands a ship in the Mediterranean.

PATRONYMIC A name derived from one's father or ancestors.

PAVEMENT. A layer of stone or bricks, which serves to cover the ground and form a path or road. In London, the pavement for coachways is principally a kind of granite from Scotland; for the foot path, Yorkshire paving stone is used. Courts, stables, kitchens, halls, churches are commonly paved with tiles, bricks, or freestone. In France, they mostly use freestone; in Venice and Holland, and other countries, they use for the most part bricks.

PAVILION. A large tent raised on posts to lodge under in summer time.

PAUPER. One receiving parish relief.

PAUPERIS IN FORMA. See Forma.

PAUSE. A stop or cessation of speaking, singing, playing, &c.

PAUSE (in Music). A character of time, denoting that the note must be drawn out to a greater length.

PAWN (in Commerce). A pledge given by way of security for the payment of a sum of money.

PAWN (in Chess). One of the common men.

PAWNBROKER. One who lends money upon goods left in pledge.

PAY. What is allowed to each individual in the army. Full pay is the full allowance; half pay, that which is allowed to officers on their retiring from the service.

PAYING. A sea term for anointing a mast, yard, &c., with tar, pitch, turpentine, &c.

PAYING OFF. A sea term for letting a ship's head fall to leeward of the point, whither it was previously directed.

PAYING OFF A SHIP. Discharging the crew from actual service, that the ship may be laid up in ordinary.

PAYMASTER. He who has the charge of paying a regiment.

PAYMENT The discharge of a debt, also the time and measure of paying. Prompt payment, the payment of a bill or debt before it becomes due.

PEA. A kind of pulse, that is either planted in gardens for the food of man, or in the fields as a food for cattle.

PEACE (in Law). A quiet and inoffensive behaviour towards the government and the people.

PEACE ESTABLISHMENT. The number of effective men required in the army and navy during peace.

PEACE OF GOD AND THE CHURCH. In England, the time of vacation between terms, when there is a cessation from lawsuits.

PEACE OF THE KING. In England, that peace and security, both for life and goods, which the king affords to all his subjects.

PEACE OF THE KING'S HIGHWAY. In England, the immunity that the king's highway has to be free from all molestation.

PEACH. A delicious, juicy fruit, that, in England, grows against garden walls, and in America, is produced abundantly in orchards.

PEACOCK. A well known domestic bird, remarkable for the beauty of its tail and the harshness of its cry

PEAK (in Geography). A mountain or elevation with a sharp summit, as the Peak of Teneriffe.

PEAK (among Mariners). The upper corner of sails which are extended by a gaff or by a yard, which crosses the mast obliquely.

PEAR A well known class of trees which yields a great variety of fruit, as the musk, muscadelle, rose, bergamot, bury pear, sickle St. Michael's, &c.

PEARL. A concretion found in several shells, as in some species of the oyster and muscle. Pearls are of a silvery or bluish white colour, and very brilliant. They are supposed to be produced by a distemper in the animal, similar to the stone in man; they are formed, however, of the same matter as the inner shell, and consist of layers one over another, after the manner of an onion

PEARL, Mother of. The shell of another species of oyster, not the pearl oyster. It is extremely smooth, and as white as the pearl

PEARLASH. Potash calcined or cleared of its impurities by fire.

PEARL BARLEY. The seed of common barley rubbed into small round grains like pearl, of which a cooling drink is made.

PEAT. A sort of fuel dug out of the earth. It is the remains of decayed vegetables, as leaves, stringy fibres, the wood of decayed trunks of trees. &c. It is found in low valleys and bogs in Great Britain and other parts of Europe, and in America.

PEAT MOSS. The bed in which peat is found, either on the surface of the soil, or covered over with sand or earth to a short depth.

PEBBLES. A sort of fossils distinguished from flints by having a variety of colours.

PECCARY. An animal of the hog kind, found in Mexico

PECK. A dry measure, the fourth part of a bushel.

PECORA. An order of animals in the Linnæan system, under the class mammalia, comprehending such as have the feet hoofed and cloven, and live on grass, and chew the cud, and have four stomachs, as the antelope, the camel, camelopard, stag, musk, sheep, ox, cow, &c.

PECTORAL. Relating to the breast, as pectoral medicines, medicines good for curing diseases in the breast.

PECULIAR (in Law). In England, a church or parish having a jurisdiction within itself.

PECULIARS, Court of. In England, a court belonging to the archbishop of Canterbury, which takes cognizance of matters relating to parishes that have a peculiar jurisdiction.

PEDANTRY. A needless or ill-timed display of learning.

PEDESTAL. The lowest part of a column.

PEDIMENT. A low pinnacle, serving to crown a frontispiece, &c.

PEDOMETER. See Perambulator.

PEER (in Law). An equal, or one of the same rank and condition; formerly applied, in England, to the vassals or tenants of the same lord; and now applied to those who are impannelled in an inquest upon a man accused of any offence, who, by the criminal law, ought to be peers or equals of the person accused.

PEERESS. The lady of a peer.

PEERS OF THE REALM. In England, the nobility of the kingdom, who, though distinguished by the different titles of duke, marquis, earl, viscount, and baron, are nevertheless all peers or equals in their political character as lords of parliament.

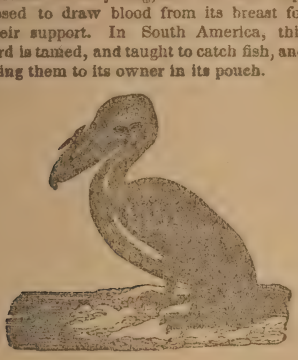
PEEWIT, or Lapwing An European bird that frequents marshes, and the banks of streams, about the size of a pigeon, and resembling the plover. A similar bird, but much smaller in size, bears the same name in the United States

PEGASUS (in the Heathen Mythology). A winged horse, on which Bellerophon is fabled to have ridden.

PEGASUS (in Astronomy). A constellation in the northern hemisphere, containing from 20 to 89 stars, according to different writers

PELICAN A large bird found in all

warm countries, the bill of which is straight, except at the point. It has a skin reaching down the neck, which forms a pouch capable of holding many quarts of water. The pelican has a peculiar tenderness for its young, and has been supposed to draw blood from its breast for their support. In South America, this bird is tamed, and taught to catch fish, and bring them to its owner in its pouch.



PELICANUS. The generic term in the Linnæan system for the sort of birds of which the pelican is the principal species. It comprehends also the cormorant or corvorant, man of war bird, and the gannet

PELLICLE. A thin film or fragment of a membrane.

PELLITORY OF THE WALL. An herb that is used in medicine.

PELT. The skin or hide of an animal.

PELVIS (in Anatomy). The lower part of the abdomen.

PEN. An instrument for writing.

PEN (in Husbandry). A fold or enclosure for sheep, &c

PENAL LAWS. Laws made for the punishment of criminal offences.

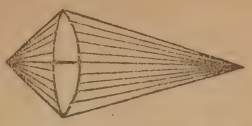
PENALTY (in Law). A fine or forfeiture by way of punishment.

PENANCE (in Ecclesiastical Law). An infliction of some pain or bodily suffering, as an exercise of repentance for some sin, either voluntary or imposed by the priest in the Romish church.

PENATES. The household gods of the Romans.

PENCIL. An instrument used in drawing and painting.

PENCIL OF RAYS (in Optics). A number of rays diverging from some luminous point, which, after falling upon and passing through a lens, converge again on entering the eye.



PENDANT. A sea term for a narrow banner or streamer. The broad pendant is a flag that serves to distinguish the chief of a squadron.

PENDULUM. A heavy body so suspended that it may vibrate or swing backwards and forwards.

PENDULUM CLOCKS. Clocks that have their movements regulated by the vibration of a pendulum.

PENDULUM ROYAL. A clock whose pendulum sways seconds, and goes eight days without winding up.

PENETRATION OF BODIES. A term in physiology, denoting that the parts of one body occupy the interstices between the parts of the other

PEMMICAN. Meat cut into thin slices, divested of fat, and dried in the sun; cured meat dried to hardness, then pulverized and mixed with fat, and sometimes raisins, and afterwards compressed, used on long journeys of exploration, or during long sea-voyages.

PENOLOGY. The science which treats of public punishments as they affect the community.

PENTACHORD. A musical instrument of five strings; a system or order of five sounds.

PENTACLE. A figure composed of two equilateral triangles intersecting each other so as to form a six-pointed star, used with superstitious import by the astrologers and mystics of the middle ages.

PENTACOCCOUS. Having or containing five seeds or grains.

PENTREMITES. In geology, a genus of fossil star-fish—so called from the five polygonal plates which compose their pear-shaped receptacle.

PENNYWEIGHT An English troy weight, marked thus, dwt., containing 24 grains.

PENSION (in Law) An annual allowance made to a person by a prince or government without any equivalent in return.

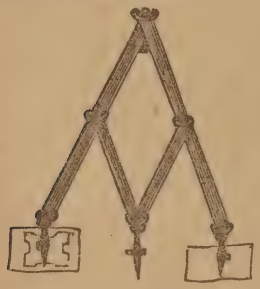
PENSIONER. One who receives a pension; also one maintained at the charge of the king, government, company or hospital.

PENSIONERS, Gentlemen, or King's Pensioners. In England, a band of gentlemen, to the number of 40, first set on

foot by King Henry VII., whose office it is to guard the king's person in his palace.

PENTAGON. A geometrical figure, having five sides and five angles

PENTAGRAPH. A copying machine, by which designs may be copied in any proportion by persons who are not skilled in drawing. It consists of four jointed levers, as in the subjoined figure



PENTAGYNIA (in Botany). An order of plants in the Linnæan system, comprehending such as have five pistils in an hermaphrodite flower.

PENTAMETER. A sort of verse in Latin and Greek, consisting of five feet or metres.

PENTANDRIA (in Botany). One of the Linnæan classes, comprehending plants which have flowers with five stamens.

PENTATEUCH. The five books of Moses.

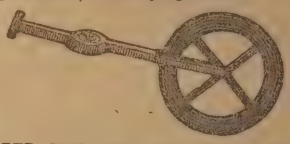
PENTHOUSE. A shed hanging forward.

PENUMBRA (in Astronomy). A partial shade observed between the perfect shadow and the full light in an eclipse.

PEPPER. An aromatic fruit or berry brought from India. It is of three kinds namely, black, white, and long. The black is the fruit of a tree that grows in the Spice Islands.

PER. A Latin preposition, signifying by, used in many phrases; as, per force, pr. or per annum, per cent. or per centum, &c

PERAMBULATOR. An instrument for measuring distances, otherwise called a pedometer, or surveying wheel



PER CENTUM, or Pr. Cent. Rate of interest, so much for each hundred; as, five per cent, that is, five dollars for every hundred dollars.

PERCH. A kind of fish with sharp, incurvate teeth, that prey upon other fish, the flesh of this fish is very delicate

PERCH (in Commerce). A measure of five yards and a half, or sixteen feet and a half

PER CHANCE. Accidentally

PERCUSSION. The impression a body makes in falling or striking upon another. It is either direct or oblique, direct when the impulse is made in the direction of a line perpendicular at the point of impact, and oblique when it is given in a line oblique to the place of impact, or that does not pass through the common centre of gravity of the two striking bodies.

PEREMPTORY (in Law). Absolute or determinate, as peremptory writ, &c

PERENNIAL. A plant the root of which continues for more than two years

PERFORATION. Boring or making a hole through.

PER FORCE. Against one's inclination.

PERIANTH. The calyx or cup of a flower when it is contiguous to the flower, in distinction from the calyx or outer covering of the flower

PERICARDIUM. A double membrane, which surrounds the whole compass of the heart.

PERICARP. A viscous bag with seeds, or a vessel producing seeds

PERICRANIUM. A membrane which encloses the bones of the skull.

PERIGEE (in Ancient Astronomy). That point in the heaven in which the sun or any planet is least distant from the centre of the earth

PERIHELION (in Modern Astronomy). That point of a planet's orbit in which it is nearest to the sun.

PERIMETER. The ambit or extent which bounds a figure or body, whether rectilinear or mixed.

PERIOD (in Astronomy). The entire revolution of a planet.

PERIOD (in Chronology). The revolution of a certain number of years, as the Julian period.

PERIOD (in Grammar). A full stop at the end of any sentence, marked thus (.)

PERIOD (in Arithmetic) A point or comma after every third place in a series of figures; also in the extraction of roots, to point off the figures into given numbers or parcels.

PERIOD (in Medicine). The interval between the coming of fits in intermitting disorders.

PERIOECI (in Geography). Inhabitants of the earth who live under the same parallel of latitude, but opposite parallels of longitude.

PERIPHERY. The circumference of any circle or curve, &c.

PERIPATETICS. The followers of Aristotle, whose doctrines are distinguished by the name of the Peripatetic philosophy. He also was called the Peripatetic because he delivered his lectures walking.

PERIPHRASIS. Circumlocution, or expressing any thing by many words which might be expressed by a few.

PERISCII. Inhabitants of the earth whose shadow goes round them in a day.

PERISTALTIC MOTION. The motion of the intestines, which resembles the motion of a worm.

PERISTYLE. A piazza, as in the middle of the gymnasium at Athens.

PERJURY. Taking a false oath knowingly and wilfully

PERIWINKLE. A kind of sea snail.

PERMIT (in Law). A license or warrant for persons to pass with or sell goods.

PERMUTATION. The same as combination.

PERORATION. The epilogue or concluding part of an oration.

PERPENDER, or PERPEND STONE. A stone fitted to the thickness of a wall.

PERPENDICULAR (in Geometry). A line, which, when it falls upon another line, makes the angles on each side equal and right angles.

PERPENDICULAR (in Gunnery). A small instrument used for the finding the centre line of a piece, in the operation of pointing it at any object.

PERPETUAL CURATE. In England, a curate that is not removable at the pleasure of any one.

PERRY A drink made of the juice of pears.

PER SALTEM. At once, or at a leap

PER SE By or in itself; things considered per se, that is, in the abstract, or abstracted from all others

PERSECUTION. The infliction of pain on another designedly and with force and violence, in violation of the laws either of God or man, such as the persecutions of the primitive Christian church; the first happened in the reign of Nero, and the last in that of Diocletian.

PERSEUS (in Heathen Mythology). A hero, the son of Jupiter and Danae, who procured the Gorgon's head, and released Andromeda.

PERSEUS (in Astronomy). A constellation in the northern hemisphere.

PERSIAN LILAC. A handsome shrub, having a broader leaf and a finer flower than the common lilac.

PERSIAN ORDER (in Architecture) An order wherein the entablature is supported by the figures of men instead of columns. They were intended to represent the Persians taken captive by the Athenians.

PERSIAN WHEEL. An engine for watering lands.

PERSON (in Grammar). A term for nouns and pronouns which express the person of the speaker; also the inflection of verbs answering to the different persons. There are three persons, namely, the first, or the person speaking; the second, the person spoken to; and the third, the person spoken of.

PERSONAL (in Law). Belonging to the person and not to the thing, as personal goods, as opposed to real property or estates; personal action, an action against the person.

PERSONAL VERB (in Grammar). A verb that has inflections or endings to express the persons of the agent.

PERSONALTY (in Law). Any thing personal, in distinction from things real.

PERSONATÆ (in Botany). One of Linnæus's natural orders of plants, which have a labiate corolla or flower with the lips closed, as the aconite, &c.

PERSONATING. Representing any one by a fictitious or assumed character, so as to pass for the person represented.

PERSONS. The three persons or subsistences in the Holy Trinity; namely, the Father, Son, and Holy Ghost.

PERSONS (in Law) are distinguished

into natural persons, whom God has formed, and artificial persons, or those formed by society, as corporations or bodies politic.

PERSPECTIVE. A branch of mixed mathematics, which shows how to represent objects on a plain surface as naturally as they would appear to our sight if seen through that plane, supposing it were as transparent as glass. Perspective is divided into Aerial Perspective, which has principally a reference to the colouring and shading of distant objects; and Lineal Perspective, which relates to the position, form, magnitude, &c., of the several lines or contours of objects, &c.

PERSPECTIVE, History of. Perspective, as a branch of optics, was known and practised at an early period. It was taught by Democritus and Anaxagoras, and treated of by Euclid in his Optics. Alhazen likewise, in his optical treatise, speaks of this art, and of its importance for the painter; but the first writers who professedly treated on perspective, were Bartolemeo Bramantino, in his Regole di Perspectiva, &c., dated 1440, and Pietro del Borgo, who supposed objects to be placed beyond a transparent tablet, and so to trace the images which rays of light emitted from them would make upon it. Albert Durer constructed a machine upon the principles of Borgo, by which he could trace the perspectiev appearance of objects. Leon Battista Alberti, in his treatise De Pictura, speaks chiefly of perspective; and Balthazar Peruzzi, of Siena, who died in 1500, wrote a system of perspective, which appeared in 1540. He is said to have first recommended points of distance, to which are drawn all lines that make an angle of 45 degrees with the ground line Guido Ubaldi, in his Perspective, published in 1600, showed that all lines are parallel to one another, if they be inclined to th ground line, and converge to some point in the horizontal line; and that through this point also will pass a line drawn from the eye parallel to them. His work contained the first principles, which afterwards formed the groundwork of Dr. Taylor's. He was immediately followed by Giacomo Barozzi, of Vignola, whose Two Rules of Perspective were published, with a commentary, by Ignatius Dante. Marolois' work was published at the Hague in 1615, and that of Sirigatti, which was an abstract of Vignola's, in 1625. But the most celebrated writer on this subject was Dr. Brooke Taylor, who, in his Linear Perspective, has laid down principles far more general than those of any of his predecessors. He does not confine his rules to the horizontal plane only, but he has made them applicable to every species of lines and planes. Likewise, by his method, which is exceedingly simple, the few est lines imaginable are required to produce any perspective representation. As a proof of the excellence of his method, it suffices to add that it has been followed by all who have treated on this subject, and is universally adopted in practice Mr. Hamilton published his Stereography in 2 vols. folio, after the manner of Dr Taylor; besides which there are some good treatises on the subject from Ware Cowley, Ferguson, Emerson, &c.; but Mr. Kirby's system of perspective has been generally esteemed for its practical utility

PERSPECTIVE. In gardens, or at the end of galleries, designed to deceive the eye by representing the continuation of an alley or a building, &c.

PERSPECTIVE-GLASS. The glass or other transparent surface, supposed to be placed between the eye and the object, perpendicularly to the horizon.

PERSPIRATION. The evacuation of the juices of the body through the pores of the skin. This is either sensible, which is called sweating; or insensible, which is not perceptible to the senses.

PERUVIAN BARK. A drug, the bark of a tree growing in Peru.

PESTLE. An instrument for pounding in a mortar

PETAL The leaf of the corolla or flower.

PETARD (in Fortification). A hollow engine shaped like a sugar-loaf, made for breaking open gates, drawbridges, &c.

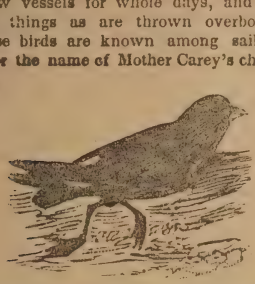
PETIOLE (in Botany). The leaf-stalk, or the stem which supports the leaf.

PETITION (in Law). A supplication in lieu of a writ, which, in England, is always made by a subject to the king when the latter is a party in the suit; also any supplication drawn up in form, and addresed either to the executive or the legislature.

PETITIO PRINCIPII (among Logicians). Begging the question, or taking for granted, that which is the matter in dispute.

PETREL A sea-bird, which has the faculty of spouting pure oil from its bill. It is a sure prognostic of a storm at sea, when it hovers about a ship. The petrel is about the size of the swallow; its legs are long and slender, and its colour is black. It is seen in all parts of the ocean busily engaged in searching for food. It braves the utmost fury of the storm, skim

ming along the waves, sometimes above their tops, and sometimes screening itself from the blast, by sinking down into the billows between them. It does not sit upon the water, but often places its feet upon it, and sustains itself by the aid of its expanded wings while it picks up some piece of food. Flocks of these birds follow vessels for whole days, and eat such things as are thrown overboard. These birds are known among sailors, under the name of Mother Carey's chickens.



PETRIFACTIONS (among Mineralogists). Stony matters incrusted within the cavities of organized bodies, as the incrustations of limestone or selenite, in the form of stalactites or dropstones from the roofs of caverns.

PETRIFICATION. The conversion of wood, bones, or any other substance, into stone; also that which is turned into stone.

PETROLEUM. Rock oil, a liquid, bituminous substance, which distils from rocks.

PEWTER. A compound metal, or an alloy of tin with copper, lead, zinc, bismuth, or antimony.

PHALANX. A Macedonian legion, formed into a square compact battalion of pikemen.

PHANTASMAGORIA. An optical exhibition very similar to the magic lantern.

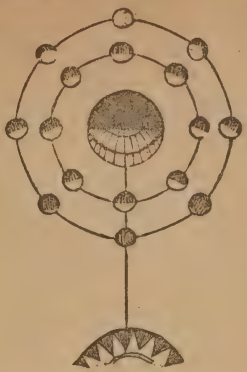
PHARAOH. A name common to several kings of Egypt, mentioned in Scripture. The fourth of this name was drowned in the Red Sea.

PHARMACOPŒIA A book of medicines.

PHARMACY. The art of preparing, compounding, and preserving substances for the purposes of medicine.

PHAROS. A watch-tower among the ancients.

PHASES. The various appearances of the moon at different ages, being first a crescent, then a semicircle, then gibbous, and lastly full, when she returns by the same gradation to the state of a new moon. These various appearances are caused by the different positions of the moon, at different times, in respect to the sun and earth



PHEASANT. A bird of game, highly esteemed for its flesh. It is a native of India, but is now common in Europe, particularly in England. See PARTRIDGE.

PHEON. A kind of missile weapon or dart with a barb, which is sometimes borne in coats of arms.

PHIAL. A little glass bottle, mostly used for medicine.

PHILOLOGY. An assemblage of sciences, consisting of grammar, rhetoric, poetry, antiquities, history, and criticism, called by the French, belles-letters; also the science of languages.

PHILOSOPHER. One who is versed in, or addicts himself to the study of philosophy.

PHILOSOPHER'S STONE. The object of alchymy by a long sought for preparation, by which, as the alchymists pretended, the base metals might be converted into gold and silver.

PHILOSOPHY. Properly, the love of wisdom, a term applied either to the study of nature or morality, founded on reason and experience, or the systems which different men have devised of explaining the

various phenomena in the natural and moral world; as the Pythagorean philosophy, which taught, among other things, the transmigration of souls; the Aristotelian philosophy, or the doctrines of Aristotle, which are to be found in his works; the Socratic philosophy, which is to be found in the writings of Xenophon and Plato; Epicurean philosophy, a sceptical, licentious scheme of morals ascribed to Epicurus; Stoic philosophy, the doctrines of Zeno the Stoic, who maintained, among other things, that a man might be happy in the midst of the severest tortures; the Cynic philosophy, the followers of which affected a great contempt of riches, and of all sciences except morality; and the Sceptical philosophy, broached by one Pyrrho, who affected to doubt every thing.

PHONOGRAPH. An apparatus which makes a permanent, graphical record of spoken words or musical sounds, and by means of which we are able to reproduce at any future time, in audible form, the same sounds it has recorded, and with all the peculiarities of pronunciation and inflection.

PHOSPHATES. Salts formed by phosphoric acid, with the alkalies, earths, and metallic oxides.

PHOSPHITES. Salts formed with phosphorus united to the earths, alkalies, and metallic oxides.

PHOSPHORIC ACID. An acid formed by the combination of muriatic acid with oxygen.

PHOSPHOROUS ACID. An acid formed by the combination of phosphorus with oxygen. It contains less of the latter than phosphoric acid.

PHOSPHORUS. A yellow, semitransparent substance, of the consistence of wax, but brittle during the frost. It is luminous in the common temperature of the air, of a rough, disagreeable taste, and a smell like garlic.

PHOSPHURET. A substance formed by the union of alkalies, earths, and metallic oxides with phosphorus.

PHRENOLOGY. A newly invented science, which professes to teach, from the conformation of the human skull, the particular characters and propensities of men, presuming that the faculties and operations of the human mind have their particular seat in the brain, and are to be traced by particular external marks See CRANIOLOGY.

PHYLACTERY. A charm or amulet among the ancients, which, being worn, was supposed to preserve people from certain evils, diseases, or dangers.

PHYSICIAN One who professes medicine, or the art of healing.

PHYSICS, or NATURAL PHILOSOPHY The science which explains the doctrins of natural bodies, their phenomena, causes, and effects, with their various affections, motions, and operations.

PHYSIOGNOMY. The study of men's particular characters and ruling passions from the features of the face and the cast of the countenance.

PHYSIOLOGY. The same as Physics; also that branch of medicine, which treats of the structure and constitution of the human body, and the functions of the various parts, with regard to the cure of diseases.

PHYTOLOGY. A treatise on the forms, properties, and kinds of plants.

PIA MATER (in Anatomy). The interior membrane, enclosing the brain.

PIANO FORTE. A well known key d instrument of German invention, which sends forth sounds both piano and forte that is, soft and strong.

PIAZZA. A spacious place enclosed with columns.

PICÆ. An order of birds in the Linnæan system, under the class Aves, comprehending such as have their bill compressed and convex, including the parrot crow, raven, magpie, cuckoo, jay, bird of paradise, &c.

PICKLE. A brine or liquor, usually composed of salt for seasoning meat, and also of spice and vinegar for preserving fruits; also the fruits preserved in pickle.

PICQUET (in Military Affairs). A certain number of men, horse or foot, who do duty as an outguard, to prevent surprises.

PIE (in Printing). The composed matter broken or thrown out of order.

PIE-POWDER, or COURT OF PIE-POUDRE. In England, a court held in fairs.

PIER. A mole or rampart raised in harbour to break the force of the sea.

PIGEON. A domestic bird, of which there are many varieties, as the rock pigeon, the carrier pigeon, the powter, shaker, tumbler, &c. See DOVE.

PIGMENTS. Artificial preparations in imitation of certain colours.

PIG OF LEAD. About two hundred and fifty pounds weight

PIKE (in Ichthyology). A fish which abounds in most of the lakes of Europe and America. It is remarkable for its voracity, and also for its longevity.

PIKE (in Military Affairs). A long slender staff, with a pike or spike at the end.

PILASTER. A square pillar

PILE (in Artillery). A heap of shot or shells piled up into a wedgelike form.

PILE-DRIVER. A machine for driving piles or stakes in the beds of rivers, as a foundation on which a bridge is raised.

PILGRIM. One who travels into foreign lands for purposes of devotion.

PILL. A solid medicine made of several ingredients into the shape of a ball.

PILLAR. An irregular kind of column, as a butting pillar, raised to support a wall.

PILLION. A sort of soft saddle for a female to sit on horseback behind a horseman.

PILLORY (in Law). A wooden machine in which offenders are exposed to the gaze of the multitude.

PILLOW. A cushion on which the head rests.

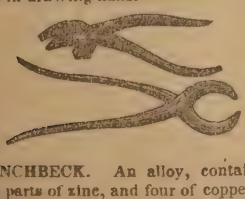
PILLOW (among Mariners). A piece of timber on which the boltsprit rests.

PILOT One who is employed to conduct ships into roads or harbours, over bars or sands, &c.

PIMENTO. See ALLSPICE.

PIN. A small, sharp-pointed piece of wire, with a head to it, used by women in fastening their clothes; also any thing in the shape of a pin, which serves to fasten, as the linchpin, which locks the wheel to the axle; also the screw of a musket barrel, and the like.

PINCERS. A sort of tool used by artificers in drawing nails.



PINCHBECK. An alloy, containing three parts of zinc, and four of copper.

PINEAL GLAND. A small, heartlike substance, about the size of a pea, situated at the basis of the brain

PINE-APPLE. The fruit of an herbaceous plant which has leaves something similar to those of the aloe. The fruit resembles in shape the cone of the pine-tree, whence it has derived its name. Its botanical name was Ananas, and in the Linnæan system Brumelia Ananas.

PINE-TREE. A large tree, the leaves of which are longer than those of the fir-tree.

PINION. The joint of a bird's wing remotest from the body.

PINION (with Watchmakers). The nut or lesser wheel of a watch.

PINION (with Mechanics). A lesser wheel which plays in the teeth of a larger.

PINK. A small fragrant flower, of divers rich colours. The superior sorts are named cloves and cinnamon.

PINK (among Painters). A faint red colour.

PINK (among Mariners). A small sailing ship.

PINNACE. A small vessel having sails and oars, and carrying three masts; also one of the boats belonging to a man of war.

PINITE. A crystallized mineral found in the mine Pini, in Saxony, composed of silex, alumina, and oxide of iron.

PINXIT, abbreviated PINX, denotes, when placed at the bottom of a picture with the painter's name, that he painted it

PIONEERS (in Military Tactics). Labourers who attend an army, in its march, to clear the way, by cutting down trees and levelling roads, as also to cast up trenches, make mines, and the like.

PIONY. A garden plant, bearing a large flower resembling a rose in shape.

PIP. A disease in young birds, which consists of a white skin or film under the tongue.

PIPE. A tube made of clay, which is used in smoking.

PIPE (in Building). A conduit for the conveyance of water and other fluids.

PIPE (in Music). A musical wind instrument, smaller than a flute. Pan-pipes are a range of short pipes bound together side by side.

PIPE (in Anatomy). The windpipe.

PIPE (in Law). In England, a roll, otherwise called the Great Roll of the Exchequer.

PIPE (in Commerce). A measure of wine, containing 162 gallons.

PIPE (among Miners). The ore which runs endwise in a hole.

PIPE-FISH. A fish so called from the length and slenderness of its body.

PIPER. A player on the pipe

PIPING. The slip of a pink.

PIQUET. A game of cards played by two persons with only thirty-two cards, rejecting all the deuces, threes, fours, fives, and sixes.

PIRATE. A sea robber; one who lives by plunder at sea.

PISCES (in Ichthyology). The third class into which Linnæus divided the animal kingdom, consisting of five orders, namely, the abdominales, apodes, cartilaginii, jugulares, and thoracici. See ABDOMINALES, &c.

PISCES (in Astronomy). The twelfth and last sign in the zodiac, marked thus (♓).

PISCIS VOLANS. A constellation in the southern hemisphere.

PISTACHIO. A nut of an aromatic smell, growing on a tree in Syria, from which an oil is extracted.

PISTIL, or POINTAL (in Botany). An organ adhering to the fruit for the reception of the pollen.

PIROGUE. A kind of canoe consisting of the hollowed trunk of a single tree, used in the southern and eastern seas; in North America, a narrow ferryboat.

PISTON. A sucker, or that part which acts as such in all pumps, &c.

PITCH. A tenacious, oily substance, drawn chiefly from pines and firs.

PITCH (in Architecture). The angle to which a gable end, and consequently a whole building, is set.

PITCH (in Husbandry). An iron bar, with a pointed end

PITCH (in Music). The acuteness or gravity of any particular sound.

PITFALL. A gin or snare to catch beasts.

PITH. The soft, spongy substance in the stalk or stem of plants.

PIVOT. The pin on which any thing turns.

PIX (in Law). The box in the mint in which the pieces of coin are kept that are selected for trial.

PIX, TRIAL OF THE. In England, the trial of the coins, previous to their being issued, before a jury of twenty-four persons, twelve of whom are goldsmiths.

PLACARD. A proclamation in Holland, and in France a table wherein laws and orders were hung up; with us, vulgarly, any bill posted up against a wall or post.

PLAID. A sort of stuff worn by Scotch Highlanders.

PLAGIARY. A literary thief, who purloins the works of another, and publishes them in his own name.

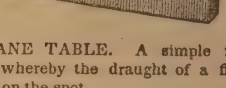
PLAGUE A contagious and malignant distemper

PLAICE. A sort of flat fish, which has a delicate flesh.

PLAN. The representation of something drawn on a plane, as maps, and charts, &c.; or, more particularly, the draught of a building, such as it is intended to appear on the ground.

PLANE (in Geometry). A plane or level surface, whose parts lie even between its extremities.

PLANE (among Joiners). An edged tool for paring and shaving wood smooth.



PLANE TABLE. A simple instrument whereby the draught of a field is taken on the spot.

PLANETARIUM, or ORRERY. An astronomical machine, made to represent the motions of the heavens. See ORRERY.

PLANE-TREE. A tall tree resembling a maple, which is a native of America.

PLANETS. Wandering bodies, or such stars as change their position, in distinction from the fixed stars. They are distinguished into primary and secondary. The primary are those which are supposed to revolve round the sun, as Jupiter, Mercury, Venus, &c.; and the secondary are those which revolve round a primary planet, as the moon, the satellites of Jupiter, Saturn, and Uranus. The original number of planets was six, constituting, as was imagined, the whole planetary system. These were Mercury, Venus, the Earth, Mars, Jupiter, and Saturn, which were distinguished by some mark or attribute of the deities of those names. Thus the mark of Mercury, ☿, represents his caduceus; that of Venus, a mirror, ♀, with a handle to it; that of Tellus, the earth, ⊕, to denote its form; that of Mars, the god of war, a spear, ♂; that of Jupiter, the first letter of his Greek name, ♃; and that of Saturn, a scythe, ♄.

PLANTAGINACEÆ. A nat. order of exogenous herbaceous plants, of which the Plantago is the genus.

PLANISPHERE. A projection of the sphere, and its various circles on a plane, such as maps, &c.; but more particularly, a projection of the celestial sphere upon a plane, representing the stars, constellations, &c.

PLANK. A piece of timber sawed for carpenters' work.

PLANTAIN. A tree in the West In-

dies, South America, and Mexico, which has a beautiful foliage, and bears an esculent fruit.

PLANTATION (in Politics). A colony or settlement of people in a foreign country.

PLANTATION (in Horticulture). Any place which is planted with shrubs and trees.

PLANTER. A proprietor of grounds in the West Indies.

PLASHING HEDGES Bending the boughs and interweaving them, so as to thicken the hedge.

PLASTER (in Medicine). An external application to the body.

PLASTER (in Masonry). Mortar for laying on walls, &c.

PLASTER OF PARIS. A paste made of gypsum. In London, the term is also applied to gypsum itself.

PLASTERER. One who plasters walls. The company of plasterers was incorporated in 1500.

PLATE. A broad, flat utensil, as a plate for eating on, and a copper-plate for printing on; any flat piece of metal in the same form or shape.

PLATE (in Commerce). Vessels or utensils made of gold or silver.

PLATFORM (in Architecture). A row of beams which support the timber work of a roof; also any erection consisting of boards raised above the ground for an exhibition or any other temporary purpose.

PLATFORM (in Fortification). An elevation of earth on which cannon is placed.

PLATFORM (in a Ship of War). A place on the lower deck; the mainmast.

PLATING. Covering baser metals with a thin plate of silver.

PLATINUM. A metal, so called from the Spanish plate-silver, because it resembles silver. It is reckoned by some to be the heaviest of all metals. It is malleable and ductile like gold.

PLATOON. A small, square body of forty or fifty musketeers, drawn out of a battalion of foot, and placed between the squadrons of horse to sustain them; also in ambuscades and narrow defiles, where there is not room for the whole battalion. It is also used to signify a part of a company of soldiers.

PLATYPUS. A newly discovered animal, the mouth of which is shaped like the bill of a duck, and the feet are webbed.

PLEA (in Law). That which either party alleges in support of his own cause.

PLEADER. A counsellor, or one who argues in a court of justice.

PLEADING Putting in a plea in law; also the form of the pleading.

PLEAS OF THE CROWN. In England, suits in the king's name, for offences committed against his crown and dignity.

PLEBEIAN. One of the plebs, or common people among the Romans.

PLEDGES (in Law). Sureties which the plaintiff finds, that he shall prosecute his suit.

PLEIADES. A cluster or assemblage of stars in the constellation Taurus.

PLENIPOTENTIARY. A commissioner or ambassador from a government invested with full power to conclude peace with another government.

PLENUM (in Physics). A term denoting that every part of space or extension is full of matter, as is maintained by the Cartesians.

PLEONASM. A form of expression in which more words are used than are necessary.

PLETHORA A preternatural fulness of blood.

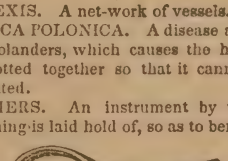
PLEURA A membrane covering the inside of the chest.

PLEURISY. An inflammation of the pleura.

PLEXIS. A net-work of vessels.

PLICA POLONICA. A disease among the Polanders, which causes the hair to be clotted together so that it cannot be separated.

PLIERS. An instrument by which any thing is laid hold of, so as to bend it.



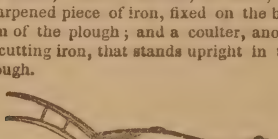
PLOT (in Dramatic Poetry). The fable of a tragedy comedy, or any fictitious narrative.

PLOT (in Surveying). The plan or draught of a field or any piece of ground, surveyed with an instrument, and laid down in the proper figure and dimensions.

PLOTTING. The describing or laying down on paper the several lines, angles, &c, of a piece of land.

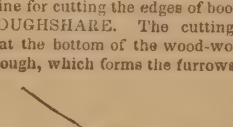
PLOVER. A sort of bird which frequents the shores of England in spring, and migrates in autumn. The golden plover, black-bellied plover, and Wilson's plover, are the varieties of this bird most common in the Middle and Eastern States They frequent coasts and open grounds.

PLOUGH (in Agriculture). A machine for turning up the soil in preparation for receiving the seed. It consists of a wooden frame, with a handle; a share, or sharpened piece of iron, fixed on the bottom of the plough; and a coulter, another cutting iron, that stands upright in the plough.



PLOUGH (among Bookbinders). A machine for cutting the edges of books.

PLOUGHSHARE. The cutting iron fixed at the bottom of the wood-work of the plough, which forms the furrows.



PLUM A well known fruit of different kinds; also the dried raisin, that is imported.

PLUMBAGO, or Black Lead An ore of a shining black colour.

PLUMBER. A maker of leaden vessels, or worker in lead. The company of plumbers in London was incorporated in 1611.

PLUMB-LINE (among Artificers) A perpendicular to the horizon, formed by means of the plummet.

PLUME. A set of feathers for ornament, particularly ostrich feathers.

PLUMMET. A leaden weight attached to a string, by which depths are sounded perpendicularly, and perpendiculars are taken by carpenters, masons, &c.

PLURALITY (in Law). In England, a term applied to any number of benefices more than one held by a clergyman.

PLUS, i. e. More. A term in algebra, to denote addition, marked by the sign (+), as 4+6=10, that is, 4 plus 6 equal to 10.

PLUSH. Cloth made either of silk, as velvet; or of hair, as shag.

PNEUMATICS. The science which treats of the mechanical properties of air and other compressible fluids. The principal mechanical properties of air which are treated of under this science, are its fluidity, weight, and elasticity.

PNEUMATICS, History of. Although the ancients did not investigate the properties of air with the same minuteness as the moderns have done, yet the subject evidently engaged the attention of Aristotle and other Grecian philosophers. Aristotle was aware of the gravity of the air, and observed that a bladder filled with air would weigh more than the same bladder when empty; and Empedocles ascribed the cause of respiration to the weight of the air, which, by its pressure, insinuates itself into the lungs. Its elasticity also, as well as its gravity, must have been known and made the subject of experiments, if it be true, as is related by historians, that Hero of Alexandria, and Ctesibius, his contemporary, invented air-guns. The subject was, however, for a long time neglected, or treated superficially; for the effects which are now known to arise from the gravity and elasticity of the air were for a long time attributed to the imaginary principle of a Fuga Vacui, or Nature's abhorrence of a vacuum, a principle which Galileo did not altogether discard, although he was fully aware of the gravity of the air, and pointed out two methods of demonstrating it by weighing the air in bottles; but the pressure of the atmosphere was first discovered by Torricelli, and clearly demonstrated by an experiment, which terminated in the invention of the barometer in 1643 It occurred to him, on observing that a column of water, 34 feet high, is sustained above its level in the tube of a common pump, that the same force, whatever that was, would sustain a column of any other fluid which weighed as much as that column of water on the same base; and hence he concluded that quicksilver, being about 14 times as heavy as water, would not be sustained at a greater height than 29 or 30 inches. Accordingly he took a glass tube of several feet in length, and, having sealed it hermetically at one end, he filled it with quicksilver; then, inverting it, he held it upright, and, keeping his finger against the open or lower orifice, he immersed that

and in a vessel of quicksilver, and, on withdrawing his finger, he found that the quicksilver, according to his expectation, descended till the column of it was about 30 inches above that in the open vessel; whence he was led to infer that it could be no other than the weight of the atmosphere incumbent on the external surface of the quicksilver, which counterbalanced the fluid in the tube, and thus introduced the principle that the air had not only weight, but that its weight was the cause of the suspension of water in pumps, and of the quicksilver in the tube. This principle, after repeated experiments from the philosophers in France, England, and Germany, became established, and that of the vacuum was finally exploded.

From this time they proceeded to be more minute in their investigations, and Father Mersenne, who was the first philosopher in France that was apprized of Torricelli's experiment, set about determining the specific gravity of air, which he made to be as 1 to 400; but Mr. Boyle, by a more accurate experiment, came to a nearer result, and made it to be to that of water in the proportion of 1 to 938, and Mr. Hawksbee succeeded, after repeated experiments, in obtaining the proportion of 1 to 885. Experiments were made by others in the winter as well as the summer, and the medium of all is about 1 to 832.

As to the elasticity of the air, which also became the subject of experiment, it was shown that, with moderate pressure, it is always proportional to the density, and that the density is always as the compressing force; whence also the elasticity of air is as the force by which it is compressed.

In consequence of these investigations into the mechanical properties of the air, not only was the barometer invented, and the air-gun revived, but other pneumatic machines were contrived, as the air-pump, air-balloon, thermometer, &c.; of which a more particular account will be found under their respective heads.

POACHING (in Law). In England, taking game by unlawful means, privately and without authority.

POCKET. A large sort of bag in which wool is packed. A pocket of wool usually contains 25 cwt. A pocket of hops is a small bag in which the best hops are commonly put.

POCKET-BOOK. A small book for holding papers and memorandums, which is carried in the pocket.

POCKET-SHERIFF (in Law). In England, a sheriff appointed by the king himself, who is not one of the three nominated in the Exchequer.

POETRY. The art of writing poems, or fictitious compositions drawn out in measured language. As respects the subject, it is divided into pastorals, satires, elegies, epigrams, &c.; as respects the manner or form of representation, into epic, lyric, and dramatic poetry, &c.; as respects the verse, into blank verse and rhyme.

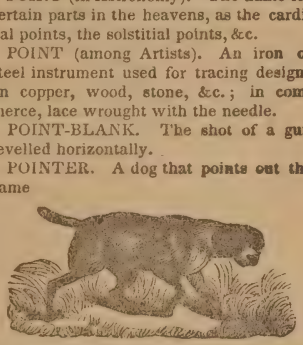
POINT (in Geometry). That which has neither length, breadth, nor thickness.

POINT (in Astronomy). The name for certain parts in the heavens, as the cardinal points, the solstitial points, &c.

POINT (among Artists). An iron or steel instrument used for tracing designs on copper, wood, stone, &c.; in commerce, lace wrought with the needle.

POINT-BLANK. The shot of a gun levelled horizontally.

POINTER. A dog that points out the game



POINTERS (in Astronomy). Two stars in Ursa Major, the hindermost of the Wain, so called because they always point nearly in a direction towards the North Pole star.

POINTING (in Gunnery). The levelling a gun towards an object.

POINTING (in Grammar). Dividing a discourse by means of points.

POINT OF SIGHT (in Perspective). A point on a plane marked out by a right line drawn from the perpendicular to the plane.

POINTS (in Grammar). Hebrew characters, to express vowel sounds; also characters for separating words and sentences from each other, as the comma (,), the semicolon (;), the colon (:), period or full stop (.), note of admiration (!), note of interrogation (?).

POINTS OF THE COMPASS. Thirty-two divisions in the mariner's compass, each of which is 11 degrees and 15 minutes distant from each other.

POISON. Any substance which in a particular manner deranges the vital functions, and terminates mortally, if not counteracted.

POLARITY. The property of pointing

to the poles, which is the characteristic of the magnet.

POLE. A long bar of wood, cut and fitted for various purposes, as the pole of a carriage, &c.

POLE (in Surveying). A measure containing 16 feet and a half.

POLE (in Mathematics). A point ninety degrees distant from the plane of any circle.

POLE (in Astronomy). The extremity of the axis of the earth, an imaginary point on the earth's surface, of which there are two, namely, the Arctic or North Pole, and the Antarctic or South Pole. These are so encompassed with ice, that every attempt to approach them within a considerable distance, has hitherto proved ineffectual.

POLECAT. An animal of the weasel tribe, which emits a most fetid vapour when pursued. It inhabits Europe and Asiatic Russia.

POLEMICS. Treatises concerning disputed points in theology

POLES (in Magnetism). The two points of a magnet, corresponding to the poles of the world, the one pointing to the north, and the other to the south.

POLE STAR, or Polar Star. A star of the second magnitude, the last in the tail of Ursa Minor, which, owing to its proximity, never sets, and is therefore of great use to navigators in determining the latitudes, &c.

POLICE. The internal government of any town or country, as far as regards the preservation of peace.

POLICY. The art of government, principally as regards foreign affairs.

POLICY OF INSURANCE. An instrument or deed by which a contract of insurance is effected.

POLITICAL ARITHMETIC. The application of arithmetical calculations to political uses, as in estimating the revenues, resources, and population of a country

POLITICAL ECONOMY. The art or theory of managing the affairs of any state.

POLL, or Deed Poll (in Law) A deed that is polled or shaved even.

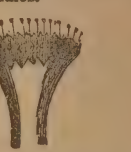
POLL (in Elections). The register of those who give their vote, containing their name, place of residence, &c.

POLLEN. A prolific powder contained in the anther of flowers.

POLLUX. A star of the second magnitude in the constellation Gemini.

POLY. A prefix in many words, denoting a multitude or indefinite number, as polysyllable a word of many syllables polygon, a figure of many angles; polyadelphia, polyandria, &c

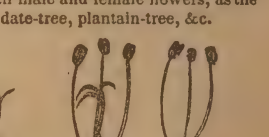
POLYADELPHIA (in Botany). One of the Linnæan classes, including plants that have many stamens to each flower united by their filaments into three or more distinct bundles.



POLYANDRIA (in Botany). One of the Linnæan classes, including plants, the flowers of which have many stamens.

POLYANTHUS. A plant with a perennial root, that yields many flowers. It is much cultivated in gardens, and greatly esteemed for the richness and diversity of its colours.

POLYGAMIA (in Botany) One of the Linnæan classes, including plants that have both male and female flowers, as the fig-tree, date-tree, plantain-tree, &c.



POLYGAMY. The having more than one husband or one wife, either at the same time or in succession.

POLYGAMY (in Law). The having more than one husband or wife at the same time, which is felony.

POLYGLOTT, i. e. Many languages; as the Polyglott Bible, a Bible printed in many languages.

POLYGON. A figure of many sides and many angles.

POLYGYNIA (in Botany). One of the Linnæan orders, containing plants the flowers of which have many pistils

POLYPE. An animal of the worm tribe inhabiting the stagnant waters of

Europe, which is remarkable for the property, that, if cut into ever so many parts, each part becomes a perfect animal

POLYPUS. A sea-fish, resembling the cuttle-fish, so called because it has numerous feet.

POLYPUS (in Surgery). A fleshy tumour, commonly met with in the nose, that abounds in ramifications, from which it has its name.

POLYSYLLABLE. A word of many syllables.

POLYTHEISM. The doctrine that there are more gods than one.

POMACEÆ (in Botany). One of Linnæus's natural orders, containing plants that have a pulpy fruit, as the apple, pear, &c.

POMATUM. A sweet-scented ointment, originally made of the juice of the apple, called pomewater, but now of hogs' lard, rose-water, &c.

POME-APPLE. A small apple, of a pleasant taste and grateful scent.

POMEGRANATE. A round fruit, of the pomegranate tree, full of kernels.

POMONA. A goddess among the Romans, worshipped as the patroness of fruits and flowers.

POMPEII. A town of Campania, at the foot of Mount Vesuvius, which was buried in an eruption that happened A. D. 79. The ruins were discovered in the middle of the eighteenth century.

PONTIFEX. The high priest among the Romans.

PONTIFF. The high or chief priest in the Romish and Greek churches, as the pope or patriarch

PONTIFICALIA. The robes in which a bishop performs divine service.

PONTONS. A bridge made of pontoons, or boats fitted for the purpose of conveying soldiers.

POOP. The uppermost part of a ship's hull.

POPE, or PAPA. A title originally given to all bishops, as the fathers of the church by order of Gregory VII., it became the peculiar title of the bishops of Rome, as heads of the Roman Catholic church.

POPLAR. A tall, slender tree, of swift growth. The wood is soft, white, and stringy.

POPULATION. The aggregate number of people in any country, which, owing to the increase of births above that of the deaths, is continually increasing in most parts of the habitable world.

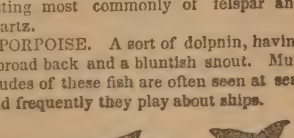
PORCELAIN. A sort of earth or clay the finest kind of which is found in China · also the ware made of porcelain or any fine earths. In China, this earth, being beaten, and steeped in water, affords a cream at the top, and a grosser substance at the bottom, the former of which is used for the finest kind of ware, or china; and the latter for the coarser sort.

PORCUPINE. An animal, native of warm climates, resembling a hedgehog but considerably larger. Its body is furnished with bristles or spines, which it erects when it is frightened.

PORES Cavities in the skin, which serve as passages for the perspiration; also small interstices between the particles of matter which compose bodies.

PORPHYRY. A compound rock, consisting most commonly of felspar and quartz.

PORPOISE. A sort of dolphin, having a broad back and a bluntish snout. Multitudes of these fish are often seen at sea and frequently they play about ships.



PORT. A harbour or place of shelter, where ships arrive with their freights, and customs from goods are taken; also the wine that comes from Oporto.

PORTCULLIS (in Fortification). A machine like a harrow, hung over the

gates of a city, to be let down to keep out the enemy.

PORTER. One who carries goods for hire, and also one who attends at a gate.

PORTER. A kind of malt liquor made of high-dried malt.

PORTHOLES. Holes in the sides of the vessels, through which guns are put.

PORTMANTEAU. A cloak-bag, to carry the necessary clothing on a journey.

POSITION (in Arithmetic). A rule in which any supposed number is taken at pleasure, to work the question by.

POSITIVE DEGREE. The first degree of any quality expressed by the word itself.

POSITIVE ELECTRICITY. A term applied to bodies supposed to contain more than their natural quantity of electricity.

POSSE COMITATUS (in Law). The armed power of the county, or the attendance of all persons charged by the sheriff to assist him in the suppression of riots, &c.

POSSESSIVE CASE (in Grammar). Any ending of nouns which denotes possession.

POST (in Military Affairs) Any spot of ground that is marked out to be occupied by soldiers.

POST (in Commerce). A conveyance for letters and despatches.

POST (in Grammar). A prefix to many words, implying after, as postdiluvian, after the deluge.

POSTHUMOUS CHILD (in Law). One born after his father's death.

POSTMAN. One who delivers the letters from the post-office to the persons to whom they are addressed.

POSITION. In arithmetic, a rule of supposition, called also Rule of False.—In geometry, a line is said to be given in position when its direction is known; in magnitude, when its length is known.—In painting, the placing of the model in the manner best calculated for the end which the painter has in view.

POSOLOGY. That part of medicine which teaches the right administration of doses.

POST-POSITIVE. In gram., placed after a word.

POST-POSITION. In grammar, a word or particle placed after or at the end of a word, and which shows the relation it bears to another word in the sentence.

POST-OBIT. A bond payable after the death of a certain person named in it, from whom the person granting it has expectations.

POSTIL. A marginal note, originally in the Bible.

POSTULATE. Any fundamental principle in a science that is taken for granted.

POTASH. An impure fixed alkaline salt, procured by burning vegetables. It is a brittle, corrosive substance, of a white colour and acrid taste.

POTASSIUM. A metallic substance, which is supposed to be the basis of potash.

POTATO. An edible root, once peculiar to America, but now common in most countries.

POTSTONE. A mineral of a greenish-gray colour, found abundantly near the lake Como, in Lombardy.

POTTERY. The manufacture of earthen pots, or earthenware in general, but particularly of the coarser sorts.

POUNCE. The powder of gum sandarach, sifted very fine.

POUND. A weight containing 12 ounces Troy, and 16 avoirdupois weight.

POUND (in Law). Any enclosed place for the keeping of beasts in, particularly such as are distrained.

POUNDER. The name of a great gun, from the weight of the ball it carries, as a six, twelve, and twenty-four pounder, &c.

POWDER. Any thing as fine as dust as gunpowder, hairpowder, &c.

POWDER-CHESTS. Triangular chests on board a vessel for holding the gunpowder, &c.

POWDER-HORN. A horn in which gunpowder is kept.

POWDER-MILL. A mill in which the ingredients for gunpowder are ground and mingled.

POWER (in Mechanics). Any force which, applied to a machine, sets it in motion. There are six simple machines, which are particularly denominated the six mechanical powers, namely, the lever, the balance, the screw, the wheel and axle, the wedge, and the pulley.

POWER (in Arithmetic). The produce of any quantity multiplied by itself any number of times, as the square, cube, biquadrate, &c.

POWER (in Law). The authority which one man gives another, to act for him.

POWER-LOOM. A loom worked by steam or water.

POWER OF ATTORNEY (in Law) An instrument or deed whereby a person is empowered to act for another.

POWER OF A GLASS (in Optics) The distance between the convexity and the focus.

POWTER. A sort of pigeon, which swells up its neck when it is displeased.

PRACTICE (in Arithmetic). An easy and expeditious method of resolving ques

tions in the Rule of Three, as applied to the daily business of a tradesman.

PRACTICE (in Law). Any fraudulent, underhand mode of proceeding.

PRACTICE OF THE COURTS (in Law). The form and manner of conducting and carrying on suits at law or in equity.

PRÆMUNIRE. See PREMUNIRE.

PRÆTOR. A chief magistrate among the Romans, instituted for the administration of justice in the absence of the consuls

PRAIRIE. Literally a meadow, but applied to the open grounds in the western country, which are generally level, and many of them of vast extent.

PRAWN. A small sea-fish of the crab kind, larger than a shrimp.

PREAMBLE (in Law). The introductory matter to a statute, which contains the reasons for making such an enactment.

PREBENDARY. In England, an ecclesiastic who enjoys a prebend.

PRECARIOUS (in Law). An epithet for what is granted to one upon entreaty, to use so long as the party thinks fit.

PRECEDENCE (in Heraldry). The right of taking place before another, which is determined by authority, and followed exactly on all public occasions of processions and the like.

PRECEDENT (in Law). An original writing or deed to draw others by.

PRECEPT (in Law). A command in writing, sent out by a magistrate for the bringing a person or a record before him.

PRECESSION OF THE EQUINOXES. A slow motion of the equinoctial points, by which they change their place, going from east to west, or backward, in antecedentia, as it is called, that is, contrary to the order of the signs

PRECIPITATE (in Chemistry). Any substance in a solution which separates and falls to the bottom, particularly a corrosive medicine made by precipitating mercury.

PRECIPITATION. The falling or causing to descend the particles of any metallic or mineral body, which are kept in the menstruum that dissolved it by putting in some alkali, &c.

PREDICATE (in Logic). That which is predicated, that is, affirmed or denied of a thing, as 'snow is white, ink is not white;' whiteness is here predicated of the snow and the ink.

PREFECT. In Europe, the governor of a place.

PRELATE. An epithet applied to a dignified clergyman, as a bishop and archbishop.

PREMISES (in Logic). The two first propositions of a syllogism, which are previously supposed to be proved.

PREMISES (in Law). Things spoken of or rehearsed before, as lands, tenements, &c., before mentioned in a lease.

PREMIUM. The sum of money given for the insuring of houses, goods, ships, &c.

PREMUNIRE (in Law). In England, a writ originally directed against those offences which affected the king or his government, which were committed under the sanction of the pope. It was afterwards extended to all such offences, from whatever cause they were committed; also the offence itself, which subjected the offender to be put out of the king's protection.

PRESBYTERIANS. A sect of professing Christians, so called from their admitting lay elders into their church government.

PRESCRIPTION (in Medicine). That which is prescribed by a physician to be taken by the patient.

PRESCRIPTION (in Law). A right and title to a thing grounded upon a continued possession of it, beyond the memory of man.

PRESENTATION (in Law). In England, the offering a clerk to the bishop by his patron, to be instituted.

PRESENTMENT (in Law). A declaration or report made by jurors or others, of any offence to be inquired of in the court to which it is presented.

PRESERVE. In England, a small enclosed place in gentlemen's grounds, where game is preserved

PRESS. A machine by which things are compressed. It acts by means of the screw, and serves for different purposes, as for pressing the juice out of grapes and other fruits for making wine, the pressing of the curd in making cheeses, &c

PRESS. The printing machine, and also printing itself, as the liberty of the press, that is, the liberty of printing what ever one pleases without any restriction from the government

PRESS, or PRESSGANG. In England, a number of men headed by an officer, and appointed to impress seamen in time of war.

PRESUMPTIVE EVIDENCE (in Law). That which amounts almost to full proof.

PRESUMPTIVE HEIR. One who, if the ancestor should die immediately, would, under present circumstances, be his heir, as distinguished from the heir apparent.

PREVENTIVE SERVICE. In England, a number of men employed on the coast, to keep watch and prevent smuggling

**PRIMA FACIE.** On the first view of any question.

**PRIMARY PLANETS.** Those which revolve round the sun as a centre, as Mercury, Venus, the Earth, Mars, Jupiter, Saturn, and Herschel.

**PRIMATE.** In England, the first or chief archbishop.

**PRIMATE** (in Zoology). The first order in the Linnæan class of mammalia, including man, the ape, baboon, monkey &c.

**PRIME FIGURE.** That which cannot be divided by any figure but itself.

**PRIME OF A GUN.** The powder put into the touchhole.

**PRIMITIVE** (in Grammar). The root or original word in a language, from which others are derived.

PRIMAGE. In commerce, an allowance paid to the master and sailors of a ship for loading or unloading a cargo, and for the use of cables and ropes.

PRIMARY. An epithet of frequent application in art and science.—In astronomy, primary planets are those which revolve round the sun as their centre, in distinction from secondary planets or satellites, which revolve round the primaries.—In painting, primary colors are those into which a ray of solar light may be decomposed. Newton supposed them to be seven: red, orange, yellow, green, blue, indigo, and violet.—In geology, primary is a term sometimes applied to those old formations composed of gneiss, mica slate, chlorite slate, and clay slate or other rocks which have undergone great change.

PRIME. In dialling, prime vertical is a vertical circle which is perpendicular to the meridian.—In arithmetic, prime numbers are numbers which have no divisors.

PRIMITIÆ. The first-fruits of any production of the earth, which were uniformly consecrated to the Deity by all the nations of antiquity.

PRIMITIVE. A term frequently applied to scientific objects.

PRIMOGENITURE. The right that belongs to the eldest son and his heir to succeed to property or to an estate.

PRIMORDIAL. Existing from the beginning; first in order; original.

PREPUCE. The skin which is removed by circumcision; that fold of integument which surrounds and envelops the glans penis.

PRESBYOPIA. In pathology, a state of the eye observed in advanced age, arising from a flattening of the cornea, and partial loss of the refractive power of the eye.

PRETIBIAL. In anatomy, situated anteriorly to the tibia.

PRESSIROSTER. In ornithology, a tribe of wading birds, including those which have a flattened or compressed beak.

**PRISM** (in Geometry). An oblong solid contained under more than four planes, whose bases are equal, parallel, and alike situated.

**PRISM** (in Dioptrics). A solid glass in the form of a prism much used in experiments on the nature of light and colours.

**PRIVATEERS.** Vessels fitted out by private persons, with the license of the prince or state, for the purpose of making prizes of the enemy's ships or goods.

**PRIVET.** A shrub much used for hedges.

**PRIVY** (in Law). One who is partaker of, or has an interest in, any action, as privies in blood, that is, heirs to the ancestor; privies in representation, as executors or administrators to the deceased.

**PRIVY COUNCIL.** In England, the principal council belonging to the king.

**PRIVY SEAL.** The king's seal, which is first set to such grants as pass the Great Seal of England.

**PRIZE** (in Naval Affairs). A vessel taken from the enemy.

**PROBATE** (in Law). In England the proving of wills in the spiritual court.

**PROBATE, COURT OF.** In the United States, a court that is charged with the settling of estates.

**PROBATION.** In England, the trial of a student who is to take his degrees.

**PROBATIONER.** In England, a scholar who undergoes a probation at the university.

**PROBE.** A surgeon's instrument for searching the depth, &c., of a wound.

**PROBLEM** (in Geometry). A proposition in which something is proposed to be done.

**PRO BONO PUBLICO.** For the public good.

**PROBOSCIS.** An Elephant's trunk.

**PROCEEDS.** What proceeds or arises from any mercantile transaction, as the net proceeds of a sale

**PROCTOR.** In England, an advocate in the civil law.

**PRODUCE.** What any country yields from labour and growth, which may serve either for the use of the inhabitants, or be exported to foreign countries. The crops of grain, &c., are the produce of the fields

PRODUCING (in Geometry). The continuing a line.

PRODUCT. The number or quantity produced by multiplying two or more numbers together, as $5 \times 4 = 20$, the product required.

PRODUCTION. A work either of nature or art, as the productions of the field, or the productions of the press.

PROFESSOR. A lecturer or reader on any art or science; one who publicly teaches any art.

PROFILE (in Architecture). The draught of a building, fortifications, &c.

PROFILE (in Sculpture and Painting). A head or portrait when represented sideways, or in a side view.

PROFIT. What is gained by any mercantile transaction.

PROFIT AND LOSS (in Commerce.) The profit or loss arising from goods bought and sold; the former of which, in bookkeeping, is placed on the creditor's side, the latter on the debtor's side.

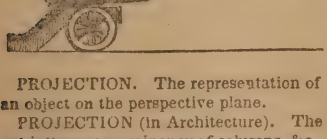
PRO FORMA. By way of form

PROGRAMMA. A bill or advertisement containing the notice of any exhibition or ceremony.

PROGRESSION (in Arithmetic and Geometry). A series of quantities, keeping a certain ratio among themselves; when they decrease or increase with equal differences, it is called arithmetical progression, as 1, 3, 5, 7, 9; when they increase by a common multiplier, or decrease by a common divisor, it is called geometrical progression, as 1, 2, 4, 8, 16, which increase by the common multiplier, 2.

PROHIBITED GOODS (in Law). Such as are prohibited to be carried out of or brought into any country.

PROJECTILES. Bodies which are thrown forward with any violent force, as stone cast from a sling, or a bullet shot from a gun. The curve line represents the path of a projectile, or ball shot from the cannon



PROJECTION. The representation of an object on the perspective plane.

PROJECTION (in Architecture). The out-jutting or prominency of columns, &c., beyond the naked wall.

PROLEGOMENA. An introduction or preliminary discourse.

PROMISSORY NOTE. A note of hand, promising the payment of a certain sum at a certain time.

PROMONTORY. Any high ground running out into the sea.

PROMPTER One who dictates to the actors during the performance.

PRONOUN (in Grammar). A word standing in the place of a noun, and marking the different persons. They are personal, when they simply denote the person, as 'I, thou, he,' &c.; possessive, when they also denote possession, as 'my, thine, his,' &c.; relative, when they express a relation to something going before, as 'which, what;' interrogative, when they serve to ask a question; demonstrative, when they point out things precisely as 'this, that;' indefinite, when they point out things indefinitely, as 'any, some.'

PROOF (in Printing). An impression from a copper-plate, to show the state of the engraving; also an impression taken soon after the engraving is finished. Proofs often sell at double the price of other impressions.

PROOF OF A GUN. The trial to ascertain that it is well cast.

PROOF SHEET. The sheet of a book taken off to be corrected.

PROOF SPIRITS. Spirits which, on proof or trial, are found to be of good quality.

PROPER NAME. The name of a particular person or thing.

PROPERTY (in Law). The highest right a man has to any thing.

PROPERTY (in Physics). Any attribute of a thing which is not essential to its existence.

PROPORTION. The equality or similitude of ratios; thus the four numbers, 4, 8, 15, 30, are proportionals, or in proportion, because the ratio of 4 to 8 is equal or similar to that of 15 to 30, it being in both cases as 1 to 2. Between proportion and ratio there is this difference, that the proportion consists always of four terms, and the ratio only of two.

PROPOSITION (in Mathematics). A thing proposed to be demonstrated or provided.

PROPOSITION (in Logic). Any sentence or speech which affirms or denies any thing; consisting of the subject, or that of which any affirmation or denial is made; the predicate, or that which is affirmed or denied of the subject; and the copula, which unites the two.

PROROGATION. In England, the interruption or putting off a session of parliament to a certain time appointed by the king

PROSECUTION (in Law). The commencing a suit against any one in a court of law.

PROSODY. That branch of grammar which teaches the pronunciation of words according to a certain rule or measure.

PRO TEMPORE. For the time being.

PROTEST. In England, the declaration of any peer in parliament stating his dissent from the vote of the house, and his reasons for such dissent, which he has a right of entering on the journals of the house, also a declaration against the proceedings of a court.

PROTEST (in Commerce). The act of the master, on his arrival with his ship from parts beyond the seas, to save him and his owners harmless and indemnified from damage sustained during a storm; also the declaration made by the holder of a bill of exchange, that the same is dishonoured.

PROTESTANT. The name first given to the followers of Luther, who protested, at the diet of Spires, against a decree of Charles V.; a name since given to all members of the reformed churches.

PROTEUS. A sea deity, who was said to assume various shapes.

PROTHONOTARY In England, a chief clerk of the king's bench and common pleas.

PROTOCOL. The first draught of a deed, contract, or instrument.

PROTOMARTYR. The first martyr or witness that suffered death in testimony of the truth; a title given to St. Stephen.

PROTOTYPE. The first pattern or model of a thing; the original of a copy.

PROTRACTOR (in Surgery). An instrument for drawing out extraneous bodies from a wound.

PROTRACTOR (in Surveying). An instrument for laying down on paper the angles in a field. The protractor is a small semicircle of brass or other material, the limb or circumference of which is nicely divided into one hundred and eighty degrees.

PROV. An abbreviation for Proverbs.

PROVISO (in Law). A condition inserted in a deed.

PROVOST. The mayor or chief magistrate in Scotch cities and towns.

PROVOST-MARSHAL. An officer in the army, whose concern it is to apprehend deserters; and in the navy, to take charge of the prisoners, &c.

PROW. The head or fore part of a ship.

PROXY. One who acts or stands for another in his absence.

PROXY (in the House of Lords in England). The peer who is deputed by another to vote for him in his absence.

PRUNELLA. A preparation of purified saltpetre.

PRUNING. Lopping off superfluous branches of trees, in order to make them bear fruit the better; an important part of gardening, which can be learned only by practice and experience.

PRUSSIAN BLUE. A pigment of a dark blue colour, now procured from bullock's blood, carbonate of potash, vitriol of iron, alum, and muriatic acid.

PRUSSIC ACID. An acid procured from Prussian blue, which is one of the most violent poisons.

PSEUDO, i. e. FALSE. A prefix used to many words, as pseudo martyr, a counterfeit martyr.

PTOLEMAIC SYSTEM. The system of astronomy laid down by Ptolemy, the celebrated astronomer and mathematician of Pelusium in Egypt. This system is founded on the hypothesis that the earth is immovably fixed in the centre, not of the world only, but also of the universe, round which the sun, moon, planets, and stars all move from east to west once in 24 hours.

PUBLICAN. A taxgatherer, or farmer of the public revenues among the Romans; now the keeper of a public house or common place of entertainment.

PUBLICATION. In England, the giving out copies of depositions in the Court of Chancery.

PUBLICATION (in Literature). The editing and printing a book; also any book or pamphlet offered to the public.

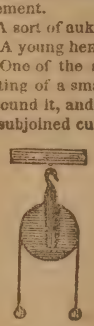
PUBLISHER. One who puts forth any printed book to the world, particularly he who prints and publishes the manuscript copies of authors.

PUDDING STONE. A mineral aggregate, consisting of flint pebbles imbedded in a silicious cement.

PUFFIN. A sort of auk or sea-gull.

PULLET. A young hen.

PULLEY. One of the six mechanical powers, consisting of a small wheel, having a groove around it, and turning on an axis, as in the subjoined cut.



PULLEYS, SYSTEM OF, OR POLYSPACTON An assemblage of several pulleys

combined together, some of which are in a block or case, which is fixed, and others in a movable block, that rises and falls with the weight

PULP The soft part of fruits, roots &c.

PULPIT. A stage among the Romans, on which the actors performed their parts.

PULPIT (in the Christian Church). An elevated desk, where the sermon is delivered.

PULSATION. The beating of the pulse; also a morbid sensation in the body like the beating of the pulse.

PULSE (in Anatomy). The beating of the arteries, or their alternate contraction and dilatation, by which the blood is impelled forward to all parts of the body.

PULSE (in Physics). The stroke with which any medium is effected by the motion of light, sound, &c.

PULSE (in Botany). All sorts of grain contained in husks or shells.

PULVERIZATION. The reducing any solid substance to powder; or, in regard to the soil, reducing it to a state of fineness fit for the reception of the seed; an important part of husbandry

PUMA. The cougar of America. It is found both in the northern and southern divisions. In North America it is vulgarly called panther. It is now seldom found in the Atlantic States, though it was formerly common in all parts of the country. It is about the size of a large dog, and is of a general ash colour. It is sometimes called the South American lion: it is of sufficient strength to bear the body of a man up a tree.

PUMICE STONE. A spungy, light, crumbling stone, which is cast out from volcanic mountains.

PUMP. A machine for drawing water or any other fluid, the invention of which is ascribed to Ctesibius; pumps may either be forcing pumps, or lifting and sucking pumps, which latter are in most general use.

PUMPKIN. A well known vegetable that grows upon a vine, and in New England is much used for pies.

PUN A playing with words which agree in sound, but differ in sense.

PUNCH. A liquor made with water, sugar, and the juice of lemons or oranges; also an instrument of iron or steel, used in piercing holes.

PUNCHEON. A block or piece of steel having figures engraven on it, from which impressions are taken; it is used by goldsmiths, cutlers, pewterers, &c.

PUNCTUATION. That branch of grammar which teaches the right method of dividing sentences by means of points or stops. See POINTS.

PUNCTUATION (in Surgery). The operation of making punctures or small wounds in the skin with a needle, for relief in certain disorders, as rheumatism.

PUNT. A sort of flat-bottomed boat.

PUPA. The chrysalis or quiescent state of an insect

PUPIL (in Anatomy). The round aperture in the middle of the iris, the ball or apple of the eye, through which the light passes.

PUPIL (in the Civil Law). One under the care of a tutor.

PURGATION. The clearing one's self of a crime; a mode of trying persons accused of any crime, which was formerly in practice in England

PURGATORY. A place where, according to the Roman Catholics, the souls of the faithful are purified by fire, from the sins which they carry with them out of this life, before they are admitted to a state of perfect bliss.

PURITAN. In England, a name given originally in derision to dissenters, who professed to have a purer doctrine and discipline than others.

PURPLE. A mixed colour of red and blue.

PURSER. An officer on board a man of war, who takes charge of the provisions.

PUS. The corrupt matter issuing from a sore, which usually precedes the healing, and in such cases is termed healthy or good conditioned pus.

PUTREFACTION. The spontaneous decomposition of animal and vegetable matter, accompanied mostly with a fetid smell. Water and atmospheric air are active agents in this process of nature.

PUTTY. Whiting and linseed oil pounded together into a paste, which is used by glaziers in fastening the panes of glass, and also by painters in stopping crevices.

PUZZULANA. A gray kind of earth used in Italy for building under water.

PYRAMID (in Architecture). A solid massy edifice, constructed in the figure of a pyramid, as described in the next article.

Of these edifices the Egyptians have left some specimens, as wonderful monuments of human skill. The largest pyramid, or the great pyramid, as it is called, is situated with others, near Memphis, and is about 500 feet high.

PYRAMID (in Geometry). A solid standing on a triangular, square, or polygonal basis, and terminating in a vertex or point at the top.

PYRITES. A mineral composed of iron and sulphur.

PYROLIGNEOUS ACID. An acid obtained from beech and other woods, which is a liquid of the colour of white wine, of a strong acid, and slightly astringent taste. It is an antiseptic, and serves instead of wood smoke, of which it is the principle, for preserving animal substances.

PYROMETER. An instrument for measuring high temperatures, particularly the one invented by Mr. Wedgewood for determining the expansion of solid bodies by heat. This instrument is founded on the principle that clay progressively contracts in its dimensions in proportion as it is exposed to higher degrees of heat

PYROPHORUS. A preparation from alum by calcination, which takes fire on exposure to the air.

PYROTECHNY. The science which teaches the management and application of fire in several operations, particularly in the construction of artificial fire works.

PYTHAGOREAN SYSTEM The system of astronomy taught by Pythagoras, which was founded on the hypothesis that the sun was a movable sphere situated in the centre, round which the other planets revolved. This is now called the Copernican system, because it was revived by Copernicus.

PYTHIAN GAMES. Games celebrated in Greece every five years, in honour of the Pythian Apollo at Delphi.

## Q.

Q, the seventeenth letter of the alphabet, as a numeral, stood for 500; with a dash over it, thus $\bar{Q}$, for 5000; as an abbreviation among the Romans for Quintus, &c.; among Mathematicians, Q. E. D., Quod erat demonstrandum, i. e., which was to be demonstrated, &c.; among Physicians, Q. S. Quantum sufficit, as much as was necessary.

QUACK A medical impostor

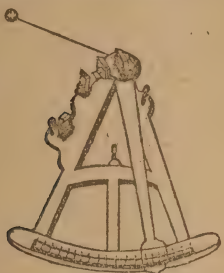
QUADRANGLE (in Geometry) A figure consisting of four sides and four angles.

QUADRANGLE (in Architecture). Any range of houses or buildings with four sides in the form of a square.

QUADRANT (in Geometry). An arc of a circle, containing the fourth part, or ninety degrees.

QUADRANT (in Astronomy and Navigation). An instrument for taking the

altitudes of the sun and stars. Quadrants are of different forms, but the most esteemed is Hadley's quadrant, as represented underneath. This consists of an octant, or the eighth part of a circle, the index, the speculum, two horizontal glasses, two screens, and two sight vanes.



QUADRATES (in Printing). Square pieces of metal for filling up void spaces between letters, words, &c.

QUADRATIC EQUATION (in Algebra). An equation in which the unknown quantity is a square.

QUADRATURE. The finding a square equal to the area of any figure given.

QUADRATURE OF THE CIRCLE. The finding some other right lined figure equal to the area of a circle, or a right line equal to its circumference, a problem which has employed the mathematicians of all ages, but as yet in vain. It depends upon the ratio of the diameter to the periphery, which was never yet determined in precise numbers. Archimedes showed that the diameter of a circle is to the circumference as 7 to 22, and the area of a circle to the square of the diameter as 11 to 14 nearly.

QUADRATURE OF CURVES. The finding a rectilineal space equal to a proposed curvilineal one.

QUADRILATERAL. Four sided; an epithet for a square, parallelogram, and other figures having four sides.

QUADRILLE. A game at cards played by four persons.

QUADRUPED. Any four-footed animal

QUADRUPLE. Fourfold.

QUÆSTOR. An officer among the Romans, who had the charge of the public revenues.

QUAGGA. A species of wild ass in Southern Africa.

QUAIL. A bird of game, about half the size of a partridge. The quail of America is not exactly the same as that of Europe. The bird called quail in New England, is called partridge at the South

QUAKERS. A religious sect of professing Christians, remarkable for their singular neatness of dress, and many other peculiarities. They are also denominated Friends, because they address all persons by the style of friend

QUALITY (in Physics). The property of any body which affects our senses in such manner, as that it may be distinguished.

QUANTITY (in Physics). Any thing capable of estimation or mensuration, which, being compared with another thing of the same nature, may be said to be greater or less, equal or unequal to it. Natural quantity is that which nature furnishes us with in matter and its extensions.

QUANTITY (in Grammar). An affection of a syllable, or that which determines a syllable to be long or short.

QUANTUM SUFFICIT, or Q. S. That which is necessary.

QUANTUM VALEBANT. As much as they were worth; applied to goods

QUARANTINE. The space of forty days, the time which every ship, suspected of infection, is obliged to remain in some appointed place, without holding any intercourse with the shore.

QUARREL OF GLASS. A square of glass.

QUARRY. A place underground, out of which are got marble, freestone, slate, limestone, &c.

QUARTAN. A fever or ague that comes every fourth day.

QUARTER (in Arithmetic). The fourth part of any thing.

QUARTER (in Commerce). A corn measure, containing eight bushels.

QUARTER (in Carpentry). A piece of timber four inches square.

QUARTER (in Naval Architecture). That part of a ship's hull which lies from the steerage to the transum.

QUARTER (in Geography). A name for the four divisions of the globe.

QUARTER (in Military Affairs) The

sparing of men's lives, and giving good treatment to a vanquished enemy.

QUARTER DAYS. The days which begin the four quarters of the year, namely, the 25th of March, or Lady Day; the 24th of June, or Midsummer Day; the 29th of September, or Michaelmas Day; and the 25th of December, or Christmas Day.

QUARTERING (in Law). The dividing the body of a traitor into four parts after it is beheaded.

QUARTERINGS. The partitions in an escutcheon, according to the number of coats of arms that are to be upon it.

QUARTER-MASTER. An officer whose duty it is to provide quarters or lodgings for the soldiers.

QUARTER SESSIONS. In England, a court held every quarter by the magistrates of the county, to hear and determine causes both civil and criminal; an appeal lies from these sessions to a superior court.

QUARTETTO. A piece of music for four voices.

QUARTO (in Printing). The form of a book, the sheets of which are divided into four parts or leaves, making a square; it is mostly abbreviated in this manner, 4to.

QUARTZ. A sort of siliceous earth, consisting of silica, with a small portion of alumina and carbonate of lime. It is not fusible per se, but with soda it runs into a hard pellucid glass; when broken it becomes sand.

QUASSIA. A sort of plant which is sometimes used by brewers, in the stead of hops. It is also a valuable medicine.

QUEEN CONSORT. In England, the wife of the king, who, though a subject, has nevertheless several prerogatives above other women.

QUICK. The young plants of the hawthorn, with which hedges are first made.

QUICKLIME. Unslacked lime.

QUICKSANDS. Sands that move and shake, into which those who pass over them are apt to sink.

QUICKSET HEDGE. Any live hedge, in distinction from that made of dead wood, but particularly that which is set with quick.

QUICKSILVER. The vulgar name for mercury.

QUIDNUNC. A curious person always asking after news.

QUID PRO QUO. An equivalent or return for any thing given.

QUILL. The feather of a goose or a crow, &c., particularly that of which, when cured, pens are made.

QUINCE. A sort of apple with a rough acrid taste

QUINTESSENCE. A preparation of the essential oil of some vegetable substance incorporated with the spirit of wine.

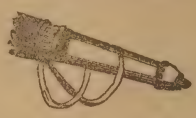
QUIRK. An odd piece in a ground plot which remains after the square has been formed.

QUI TAM. A sort of popular action, on a penal statute, brought at the suit of the commonwealth, as well as the party or informant.

QUITRENT. In England, a small rent, payable by the tenants of most manors, whereby they go quit and free from all other services.

QUOITS. A game which consisted in throwing a quoit or round iron to a certain distance.

QUIVER. A case for arrows.



QUORUM. Justices of the peace, so named because in the commission they are said to be those before whom all matters of importance are transacted

QUOTIENT. What results from the division of one number by another, as $6 \div 2 = 3$, the quotient.

QUO WARRANTO. A writ to inquire by what authority, right, or title, any person or corporation holds a franchise, exercises an office, and the like

## R.

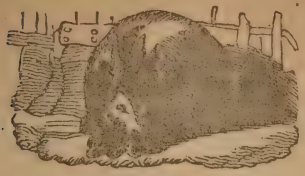
R, the eighteenth letter of the alphabet, as a numeral stood for 80; with a dash over it, $\bar{R}$, for 80,000; as an abbreviation, R. for Roma, Rex, and Royal; R. C., for Romana Civitas, &c

RABBETING The cutting of channels or grooves in a board.

RABBI. A doctor in the Jewish law.

RABBIT. An animal of the hare kind, but much smaller There are two sorts

the tame and the wild rabbit. It is not a native of America.



RACCOON. An animal of the bear tribe, which lives in hollow trees. It is said to catch crabs by letting its tail into the water, and pulling them out when they fasten upon it.

RACE. A sport which consists in running on foot, or with horses, as a trial of skill, and for a certain premium or reward. Races, by which, absolutely taken, are meant horse-races, are carried on at Newmarket, Epsom, and many other parts of England at certain seasons of the year.

RACE-HORSE, or RACER. A particular breed of horses, which are trained for the purpose of running races.

RACK. An engine of torture, formerly used in England, occasionally, and on the continent very commonly, for the purpose of extorting confession.

RACKRENT. The full value of the land let by lease.

RADIANT POINT. Any point from which rays proceed.

RADICAL. The distinguishing part of an acid, that which unites with oxygen, and is common to all acids.

RADIUS (in Geometry). The semi-diameter of a circle, or a right line drawn from the centre to the circumference.

RADIUS (in Anatomy). The bone of the fore arm.

RAFT. A sort of float, consisting of boards fastened together side by side; a mode of conveying timber by water.

RAFTERS. The pieces of timber, which, standing by pairs on the raising piece, meet in an angle at the top, and form the roof of a building.

RAG-ROWLEY, or RAGSTONE. A sort of stone of the siliceous or flint class.

RAIL. A migratory bird, which inhabits sedgy places. In the Middle and Southern States, this bird is abundant on the rocky shores of the rivers, and affords a favourite amusement to sportsmen.

RAILS. A wooden fence for enclosing a place.

RAILWAY. A way constructed of tracks of iron called rails, on which the wheels of the railway-carriages roll.—Railway-chairs are pieces of iron made to receive and support the rails, and which rest on the sleepers or blocks.—Railway-sleepers are the underlying timbers to which the chairs are fixed.

RAIN. A vapour drawn up by the sun, that, after being condensed by the cold, falls to the earth in drops from the clouds. It is supposed that rain is, in almost every instance, immediately occasioned by the electrical action of the clouds upon one another.

RAINBOW. A meteor in form of a party-coloured arc, exhibited in a rainy sky, opposite the sun, by the refraction and reflection of his rays in the drops of falling rain.

RAINBOW, MARINE. A phenomenon sometimes observed in an agitated sea, when, the wind carrying the tops of the waves aloft, and the sun's rays falling upon them, they are refracted.

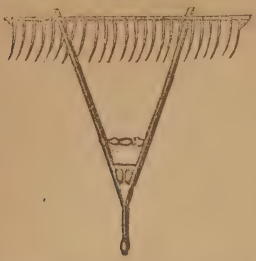
RAIN GAGE. An instrument for measuring the quantity of rain that falls.

RAISIN. The grape perfectly ripe, and dried either in an oven or by the heat of the sun; in this latter case, they are richer and sweeter than when dried in an oven. The finest sort are imported in jars, and thence called jar raisins.

RAISING A SIEGE. Giving over the attack of the place.

RAKE. An implement of husbandry provided with teeth, for making the earth light and smooth. It is also used for gathering hay and grain. The corn rake, a large kind of iron rake, used in Suffolk

and Norfolk, England, for raking barley stubbles, is represented underneath



RAKE (among Mariners). So much of the hull as hangs over both ends of her keel.

RAM. The male of the sheep.

RAMADAN. The Mahomedan fast, kept during the ninth month of the Arabic year.

RAMIFICATION. Any small branch issuing from a large one, particularly the very minute branches issuing from the larger arteries.

RAMMER. An instrument for driving stones or piles into the ground.

RAMPANT (in Heraldry). An epithet for a beast standing directly upright on his hinder legs.

RAMPART (in Fortification). A massy bank of earth raised round a fortress, to cover it from the fire of the enemy.

RAM'S HEAD. An iron lever to heave up great stones with.

RAM'S HEAD (among Mariners) A great block or pulley, into which the ropes called halliards are put

RANA The generic name for that class of animals in the Linnæan system, of which the frog and the toad are the principal species.

RANCIDITY. The change which oils undergo, both in smell and taste, by exposure to the air.

RANDOM The shot made from a piece not designed to shoot directly forward.

RANGE (in Gunnery). The line which a shot describes from the mouth of a piece to the point where it lodges.

RANGE (among Mariners). A sufficient length of the cable drawn upon the deck before the anchor is cast loose from the bow.

RANGER. In England, an officer whose duty it was to walk through the forest and present all trespasses at the next forest court: as the forest laws are now but little in use, the duty of the ranger is not of the same importance as formerly.

RANK (in Domestic Policy). The situation which one man holds in respect to another: this is particularly defined in regard to the nobility in England, as also in all offices of state, as also in the officers of the army and navy.

RANK (in Military Tactics). The straight line which the soldiers of a battalion or squadron make, as they stand side by side.

RANSOM. Money paid for the redeeming a captive or the liberty of a prisoner of war.

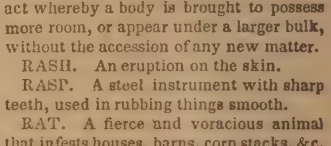
RANUNCULUS. A perennial, much cultivated in gardens, bearing a flower of a globular shape; also the botanical name of a genus of plants, of which the globe ranunculus, the crowfoot, and the spearwort, are the principal species.

RAREFACTION (in Physics). The act whereby a body is brought to possess more room, or appear under a larger bulk, without the accession of any new matter.

RASH. An eruption on the skin.

RASP. A steel instrument with sharp teeth, used in rubbing things smooth.

RAT. A fierce and voracious animal that infests houses, barns, corn stacks, &c. The common rat is a native of almost all countries, as is also the water rat, which has the faculty of swimming, and lives on the banks of rivers or ditches



RATAFIA. A delicious liquor, made of the kernels of apricots, cherries, &c., steeped in brandy.

RATE (in Law). A valuation of every man's estate, for determining the proportion that each is to pay of any tax.

RATE (in Naval Architecture). The class or degree by which vessels are distinguished, as regards their force, burden, &c.

RATIEN. A thick woollen stuff.

RATIFICATION. In England, the confirmation of a clerk formerly given him by the bishop; also the confirmation of a treaty.

RATIO. The mutual habitude or relation of two magnitudes of the same kind

in respect to quantity; thus the ratio of 2 to 1 is double, of 3 to 1 triple, &c.

RATION. The share or proportion of meat, drink, forage, &c., given to soldiers or seamen.

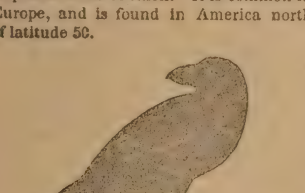
RATIONALE. The account or solution of any phenomenon or hypothesis, explaining the principles on which it depends, and every other circumstance.

RATLINES (among Mariners, called Ratlins). Lines which make the ladder steps for going up the shrouds, and futtocks.

RATTLESNAKE. An animal of the serpent kind, having a tail furnished with a rattle, which it shakes when angry. It inhabits rocky and mountainous places in North America, and although its bite is poisonous, yet it does not attack any one unless provoked.

RAVELINS. Works raised on the counterscarp before the curtain of a place.

RAVEN. A bird of the crow kind, that feeds on carrion, is long lived, and has an exquisite sense of smell. It is common in Europe, and is found in America north of latitude 56.



RAY. A beam of light, propagated from a radiant point, said to be direct when it comes direct from the point, reflected if it first strike upon any body, and is thence transmitted to the eye. Rays are also distinguished into parallel, converging, diverging, &c.

RAY. A genus of fishes of the class amphibia in the Linnæan system, the principal species of which are the skate, the thornback, the sturgeon, the ray, and the torpedo

RAZOR. An instrument for shaving.

REACTION (in Physics). The resistance made by all bodies to the action or impulse of others that endeavour to change their state, whether of motion or rest

READINGS. The different manner of reading the text of authors, particularly that of classical writers.

READINGS (in Law). Commentaries or glosses on the law text.

REAGENT. The name given by chemists to such bodies as serve to detect the component parts of others; thus the infusion of galls is a reagent which detects iron by a dark purple precipitate.

REALGAR, or RED ORPIMENT. A metallic substance, the sulphuret of arsenic, which is either native, and dug out of the earth in China, or it is factitious, procured by boiling orpiment in subliming vessels.

REAM. Twenty quires of paper.

REAPING MACHINE. An implement of husbandry for cutting down grain, instead of reaping with a sickle.

REAR. A military term for behind, as rear-guard, a body of men that follows an army in its march, to pick up stragglers and the like.

REAR. A naval term applied to the squadron which is hindermost.

REBATE AND DISCOUNT. A rule in arithmetic, by which discounts upon ready money payments are calculated.

REC. or RECEIPT. An acknowledgment in writing of money received.

RECEIVER (in Law). One who receives stolen goods; also the name of some officers appointed to receive money as the receiver of rents, or receiver of fines, &c.

RECEIVER (in Pneumatics). The receiver of the air-pump, a glass vessel placed on the top of the apparatus out of which the air is to be exhausted.

RECEIVER (in Chemistry). A vessel for receiving any distilled liquor.

RECIPE. Directions for preparing any mixture or compound, as a physician's recipe, a cook's recipe, and the like.

RECIPROCAL. An epithet for what acts by alternation.

RECIPROCAL TERMS (in Logic). Terms which, having the same signification, are convertible, as man and rational animal; for man is a rational animal, and a rational animal is man.

RECIPROCAL PROPORTION (in Arithmetic) is when, in four numbers, the fourth is less than the second by so much as the third is less than the first, and the contrary.

RECIPROCAL VERBS (in Grammar). Such as reflect the action on the agent himself, as I love myself, thou lovest thyself, &c.

RECITATIVE. The rehearsal of any thing on a stage in musical cadence.

RECKONING, or SHIP'S RECKONING. The account kept of a ship's way, by which it may be known at any time where she is; the account taken from the logbook is called the dead reckoning.

RECOGNIZANCE. A bond or obligation acknowledged in some court, or before some judge.

RECORD A public act enrolled and preserved in courts of record.

RECORDER. An officer associated with the mayor of a town for the administration of justice according to the forms of law

RECOVERY (in Law). The obtaining of any thing by judgment or trial at law.

RECTANGLE. A figure having right angles, as a square, &c.

RECTIFICATION (in Astronomy). The setting the globes in such position as to fit them for the performance of problems.

RECTIFICATION (in Geometry). The finding a right line equal in length to a curve

RECTIFICATION (in Chemistry). The repeating a distillation or sublimation several times, in order to render the substance purer and finer.

RECTOR. In England, the parson of the parish church, who has the cure or charge of the parish, and receives all the tithes, glebes, and other profits

RECTUM. The last portion of the large intestines.

RECUSANTS (in Law). A name formerly given to the Roman Catholics who refused to conform to the church of England.

RED. One of the simple or primary colours of bodies, which is distinguished into different shades, as scarlet, vermilion, crimson, &c.

RED BOOK OF THE EXCHEQUER. In England, an ancient manuscript of record, in the keeping of the king's remembrancer, which contains many things relating to the times before and after the Conquest.

REDBREAST. See ROBIN.

REDEMPTION (in Law). The right of reentering upon lands, &c., that have been assigned or sold, upon reimbursing the purchase money. This right is sometimes termed the equity of redemption.

REDOUBT (in Fortification). A small square fort, without defence but in front.

REDPOLE. A finch with a red spot on the crown.

REDSHANK A bird of the curlew tribe.

REDSTART. A European bird that is migratory, and sings very sweetly. Though very timid, it often builds its nest in cities.

REDSTREAK. A sort of apple.

REDUCTION (in Arithmetic). A rule by which money, weights or measures are reduced to their least or greatest parts.

REDUCTION OF EQUATIONS (in Algebra). The reducing them to the simplest state, or clearing them of all superfluous quantities.

REDUCTION (in Surgery). An operation whereby a dislocated bone is restored to its proper place.

REDUCTION OF A DESIGN OR DRAUGHT, &c. The making a copy thereof either larger or smaller than the original.

REDWING. A European bird, about the size of the thrush.

REDWING-BLACKBIRD. A well known American bird, that builds its nest on low bushes, near ponds, and in marshy places.

REED. A kind of long, hollow, knotted grass, that grows in fens and watery places.

REEFING. A sea term for the rolling or taking up a sail in a gale of wind.

REEL. A machine turning round on an axis, on which lines of different kinds are wound

REENTRY (in Law). The resuming or retaking possession of lands lately lost.

REEVE. See RUFF.

REFERENCE (in Law). Referring a matter in dispute to the decision of an arbitrator; also in the Court of Chancery, in England, referring a matter to a master.

REFERENCE (in Printing). A mark in the text of a work, referring to a similar one in the side or at the bottom of the page; also the authorities referred to under such marks

REFINING. The art of purifying any thing, but particularly the assaying or refining gold and silver, by separating all other bodies from them

REFLECTION OF THE RAYS OF LIGHT. A motion of the rays, whereby, after impinging on the solid parts of bodies, they recede or are driven therefrom.

REFORM IN PARLIAMENT. A change in the representative part of the English constitution, by an extension of the elective franchise to modern large towns, such as Manchester, Birmingham, &c., which have heretofore sent no members to parliament, and by taking away their franchise from reduced places, such as Old Sarum and others, which at present consist of only a few houses.

REFORMATION. The change from the Roman Catholic to the Protestant religion, which was first set on foot in Germany by Luther, but had been previously begun in England by Wickliffe, and completed by Henry VIII., who assumed the title of Head of the Church.

REFRACTION. The deviation of a ray of light from that right line in which it would have continued, if not prevented by the thickness of the medium through which it passes. Thus the light in passing through the atmosphere is refracted or bent down, which causes the heavenly bodies to appear higher than they really are.

REFUGE FOR THE DESTITUTE. A charitable institution for the temporary relief of those who are houseless and destitute

REGALIA (in Law). The rights and prerogatives of a king; also the ensigns of royalty, the crown, sceptre, &c., worn by the kings of England at the coronation.

REGENT (in Law). One who governs during the minority of a king, or while he is incapable of reigning.

REGIMEN (in Medicine). A rule of living as to diet, &c., prescribed for a patient.

REGIMEN (in Grammar). The government of one word by another, as nouns by verbs, &c.

REGIMENT. A body of soldiers, consisting of several companies.

REGISTER (in Law). A book of public records.

REGISTER (in a Parish Church) A book in which marriages, baptisms and burials are registered.

REGISTER (in Chemistry). A contrivance in furnaces for increasing or diminishing the intensity of the heat.

REGISTER (among Letterfounders). One of the inner parts of the mould in which the printing types are cast. Its use is to direct the joining the mould justly together again, after opening it to take out the new cast letter.

REGISTER (among Printers). Disposing the forms on the press, so that the lines and pages printed on one side of the sheet fall exactly on those of the other.

REGLET (in Architecture). A little, flat, narrow moulding in pannels, &c.

REGRATOR (in Law). In England, one who buys and sells in the same market or fair, or within five miles thereof.

REGULAR. Agreeable to the rules of art.

REGULAR (in Geometry). A regular figure, one whose sides and angles are all equal.

REGULAR (in Grammar). A regular verb, one that is conjugated by some rule.

REGULARS. Soldiers regularly disciplined, and at the entire disposal of the government.

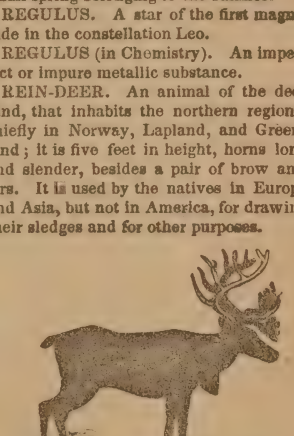
REGULARS (in the Romish Church). Clergy that live under some rule of obedience.

REGULATOR OF A WATCH. A small spring belonging to the balance.

REGULUS. A star of the first magnitude in the constellation Leo.

REGULUS (in Chemistry). An imperfect or impure metallic substance.

REIN-DEER. An animal of the deer kind, that inhabits the northern regions, chiefly in Norway, Lapland, and Greenland; it is five feet in height, horns long and slender, besides a pair of brow antlers. It is used by the natives in Europe and Asia, but not in America, for drawing their sledges and for other purposes.



REJOINDER (in Law). The defendant's answer to the plaintiff's reply.

RELATIVE (in Grammar). A sort of pronoun which relates to some noun going before, as which and who.

RELEASE (in Law). An instrument in writing by which estates, rights, &c are extinguished

RELIEVO, or RELIEF (in Sculpture). The projection or standing out of a figure above the ground or plane whereon it is formed. There are three kinds of relievo, namely, the alto, which projects as much as life; the basso relievo, when the work is raised but a little; and demi relievo, when one half of the figure rises.

RELIGIOUS HOUSES. Convents, monasteries, nunneries, and the like, in the Romish Church, where persons live under certain rules, and are bound by their vows to lead a religious life; at the Reformation, these religious houses were dissolved in England, and their wealth was seized by Henry VIII.

REMAINDER (in Law). An estate in lands, tenements, &c., limited to be enjoyed after the expiration of another estate.

REMAINDER (in Arithmetic). The difference, or that which is left after subtracting one quantity from another.

REMEMBRANCER. In England, an officer in the exchequer.

REMITTANCE. A sum of money sent from a distance.

REMORA. The generic name for the sucking-fish.

RENDEZVOUS. An appointed place of meeting, particularly for soldiers.

RENNET. The gastric juice and contents of the stomach of a calf, used in turning milk to curds.

RENT. A profit issuing yearly out of lands or tenements.

RENTAL, or RENTROLL. In England, a roll in which the rents of a manor are set down; the collective amount of rents from any man's estates.

RENT CHARGE. In England a charge of rent upon land, with a clause of distress in case of non-payment.

REPEATER. A kind of watch, which, by means of a spring, repeats or strikes the hour.

REPELLANTS. Medicines which drive the humours from the part where they have settled.

REPERTORY. A place where things are deposited; also a book in which things are methodically entered.

REPLEVIN (in Law). A release of cattle or goods that are distrained.

REPLICATION (in Law). The plaintiff's reply to the defendant's answer.

REPORT (in Law). A relation of cases judicially debated and decided upon.

REPRESENTATION (in Law). The personating another, as in the case of an heir by representation.

REPRESENTATIVE (in Law). One who represents a district or corporation, as a member of parliament, a member of congress.

REPRESENTATIVE MONARCHY. A government having national councils, consisting of persons chosen by the people, to represent their persons, and consult their interests.

REPRESENTATIVE OR FREE GOVERNMENT. A government in which the laws are made by representatives freely chosen by the people; such is the government of the United States.

REPRIEVE (in Law). A warrant for suspending the execution of a malefactor.

REPRINT. A book printed again.

REPRISALS. The seizing the vessels or goods of merchant strangers, as an equivalent for some loss sustained from the nation of which they are subjects

REPRODUCTION. The power in some bodies of being restored by a process of nature, after having been destroyed, as the reproduction of a tree from a slip, but more particularly the reproduction of animals which have been cut into pieces, as the polype, and some other worms; also the limbs of crabs, lobsters, &c., are reproduced when broken off.

REPTILES. The first order of animals under the class amphibia, in the Linnæan system, comprehending the toad, the frog, the dragon, the lizard, crocodile, &c.

REFUGNANCE (in Law). A contradiction of what has been said before, as in deeds, grants, &c., which makes them void.

REPULSION (in Physics). A power in bodies of opposing the approach of other bodies, as oil and water, which for a time refuse to be incorporated; it is opposed to attraction.

REQUESTS, COURT OF. In England, a court for the recovery of small debts.

RESCUE (in Law). The violent taking away, or causing to escape, one that is taken by lawful authority.

RESERVE. A body of men kept apart in the day of battle for some particular service, as occasion may require.

RESIANT (in Law). One residing in a certain place.

RESIDENCE (in Law). In England, the continuance of a parson or vicar on his benefice.

RESIDENT A minister of state sent to reside at any court.

RESIDUARY LEGATEE. He to whom the residue of a personal estate is given by will.

RESIDUUM. The residue, or what is left after any chemical process.

RESIN, or Rosin. A solid inflammable substance exuding from trees, as the common resin, or turpentine, from the pine; mastich from the pistacea; sandarach from the thuya; ladanum from the cystus, &c. Pure resins are soluble in alcohol, but the impure resins are not soluble.

RESISTANCE, or Resisting Force. Any power which acts in an opposite direction to another.

RESOLUTION (in Mathematics). A method by which the truth or falsehood of a proposition is discovered.

RESOLUTION (in Chemistry). The reducing a body to its component parts.

RESOLUTION (in Surgery). The dispersing of tumours.

RESOLUTION OF FORCES (in Mechanics). The dividing any force or motion into several others in other directions, but which, taken together, shall have the same effect as the single one.

RESPIRATION. An important function of the animal body, which consists in the alternate inhalation and exhalation of air, by which the lungs and chest are alternately dilated and contracted.

RETAINER. An adherent or dependant.

RETAINING FEE. A fee given to a barrister, or lawyer, to keep him from pleading for the other side.

RETALIATION The act of returning like for like

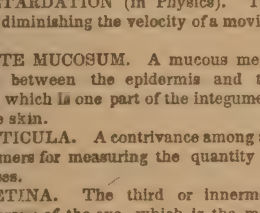
RETARDATION (in Physics). The act of diminishing the velocity of a moving body.

RETE MUCOSUM. A mucous membrane between the epidermis and the cutis, which is one part of the integument of the skin.

RETICULA. A contrivance among astronomers for measuring the quantity of eclipses.

RETINA. The third or innermost membrane of the eye, which is the most important part of the organ of vision

RETORT. A chemical vessel of a round figure, with a hollow peak or tube curved downward.



RETREAT. The retrograde movement of any army or body of men.

RETRENCHMENT. Any work raised to cover a post

RETRO. Backward; a prefix to many words, as retrocession, retrogradation, &c

RETROCESSION OF THE EQUINOXES. The going backwards of the equinoctial points of the signs Aries and Taurus.

RETROGRADATION A moving backwards.

RETURN. A certificate from sheriffs and bailiffs of what is done in the execution of a writ.

RETURN DAYS (in Law). Certain days in term time for the return of writs.

RETURNS (in Commerce). That which is returned, whether in goods or specie, for merchandise sent abroad; also the return of money laid out in the way of trade.

RETURNS OF A MINE (in Fortification). The windings and turnings of a gallery leading to a mine.

REVELATION. The miraculous communications made by God of his will to man, which are contained in the Bible.

REVENUE (in Law). The yearly profit that accrues to a man from his land or possessions. In England, the revenue of the crown is that which peculiarly accrues by way of profit to the king; in an extended sense, the public revenue, or the yearly income derived from the taxes and other sources, for the support of the government.

REVERBERATORY. A very strong furnace, used for calcining minerals, &c.

REVERSAL OF JUDGMENT. The making it void.

REVERSE OF A MEDAL. The back side, or that which does not contain the principal figure.

REVERSION (in Law) is when the possession of an estate, which was parted with for a time, returns to the doner or his heirs.

REVIEW (in Military Affairs). The display of a body of men before the general, that he may judge of their condition

REVIEW, Bill of (in Law). A bill in chancery for the re-examination of a cause

REVIEW (in Literature). A periodical publication, which professes to give a criticism of publications as they appear.

REVISE. A second proof sheet of a work, for the revisal or re-examination of the errors corrected.

REVOCATION. The recalling or making void any grant.

REVOLUTION (in Astronomy) The motion of any heavenly body in a circular line, until it returns to the same point again.

REVOLUTIONIST A favourer of political revolutions.

RHEA. A large bird of the ostrich species, found in the plains of Patagonia, and incorrectly called the South American ostrich

RHETORIC. The art of speaking on any subject with propriety, and the force of persuasion.

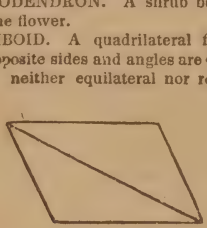
RHEUM. A thin, serous humour, that oozes occasionally from the glands about the throat and mouth.

RHEUMATISM. Wandering pains in the body, accompanied with heaviness, difficulty of motion, and sometimes a fever.

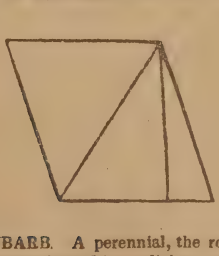
RHINOCEROS. A large beast in India, and the largest of all quadrupeds, except the elephant, having a horn in his front, and a skin full of wrinkles, which is so hard that it can scarcely be pierced by a sword

RHODODENDRON. A shrub bearing a very fine flower.

RHOMBOID. A quadrilateral figure, whose opposite sides and angles are equal, but it is neither equilateral nor rectangular.



RHOMBUS. A quadrilateral figure which is equilateral, but not rectangular.



RHUBARB. A perennial, the root of which is much used in medicine, particularly what comes from Turkey; the stalk of the European rhubarb is also much esteemed in tarts.

RHUMB. A vertical circle of any place, or the intersection of part of such circle with the horizon.

RHYME. A sort of verse which terminates with words of the same sound

RIB (in Anatomy). A side bone of the body.

RIB (in Carpentry). Any piece of timber that strengthens the side.

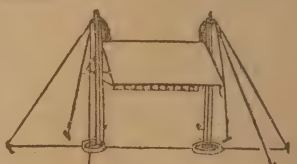
RIB (in Ship-building). The timber of the futtocks, when the planks are off, which resemble the ribs of the body.

RIBBON. A narrow sort of silk, chiefly used for head ornaments.

RICKETS. A disease in the back bone, incident to children.

RICE. A sort of esculent grain, cultivated in warm countries, which grows in husks of an oval figure.

RICK-CLOTH. In England, a tarpawling, which is set up by stacks or ricks of hay or corn, while it is stacking. It is worked with pulleys, as represented underneath



RIDER. A leaf inserted in, or attached to other leaves.

RIDER (in Commerce). One who travels for a trading or mercantile house to collect orders.

RIDER (in Gunnery). A piece of wood equal to the length of the body of the axle-tree of the gun carriage.

RIDER-ROLL (in Law). A schedule

or small piece of parchment added to some part of a roll or record.

RIDERS (in Ship-building). Timbers bolted upon others to strengthen them.

RIDGE The top of a house that rises to an acute angle; also the top of the vertebra of the back

RIDGE (in Husbandry). The highest part of the land between two furrows.

RIDING. A division of a county, as the east and west riding of Yorkshire, England.

RIDING-CLERK. In England, one of the six clerks in chancery, who, in his turn, keeps the comptrolment book of all grants that pass the great seal.

RIDING SCHOOL. A public place where persons are taught to sit gracefully on a horse, and use the bridle with propriety.

RIFLE. A gun having spiral channels in the barrel.

RIFLEMEN. Soldiers armed with rifles, and employed as marksmen to fire behind hedges.

RIGGING. All the cordage or ropes belonging to the different parts of a ship.

RIGHT (in Law). Any title or claim by virtue of a condition, mortgage, &c.

RIGHT (in Geometry). Straight, as a right line.

RIGHT ANGLE. The angle formed by one line falling perpendicularly upon another.

RIGHT SPHERE (in Astronomy). That position of a sphere by which its poles are in the horizon.

RIGLET (in Architecture). A flat, thin piece of wood, like what is designed for the frames of small pictures, before they are moulded.

RIGLET (in Printing). A thin slip of wood used in making up a form, for tightening the pages, &c.

RIND. The skin of any fruit.

RINGDOVE. A European variety of the pigeon.

RINGHEAD. An instrument for stretching woollen cloth with.

RINGLEADER. The head of a party or faction.

RING-OUGEL. A European bird, marked with a crescent of white upon the under part of the neck

RINGWORM A cutaneous disorder that comes on the skin in rings, and is contagious

RIOT (in Law). The forcible doing an unlawful thing by three or more persons, assembled together for that purpose.

RIOT ACT. A legislative act, prohibiting riotous or tumultuous assemblies, which, being read by a magistrate or peace officer to the mob, obliges all persons to disperse within an hour, on pain of being apprehended as rioters.

RISING. The appearance of any star or planet above the horizon, which, before was hid beneath it.

RITUAL. A book directing the order and manner to be observed, in celebrating religious ceremonies, and performing divine service in the church.

RIVER. A stream or current of fresh water, flowing in a bed or channel, as the river Amazon in South America, the Mississippi and Saint Lawrence in North America, the Nile in Egypt, the Euphrates and Ganges in India, the Rhine and Danube in Germany, the Rhone and Seine in France, the Tiber in Italy, the Tagus in Portugal, the Thames in Great Britain, &c.

RIVET A metal pin clinched at both ends.

RIX DOLLAR. A coin in Germany worth from sixty cents to one dollar.

ROACH A fish of the carp kind.

ROAD. A highway, or a way prepared for travellers; it is either a carriage road, where carriages may pass, or a foot road, or path for foot passengers. Military roads were formerly constructed by the Romans for the passage of their armies, of which there are still vestiges in England. Roads in the latter country are now principally made by small stones bound together with the earth, which is called Macadamizing

ROAD. A sea term for any place fit for anchorage, at some distance from the shore.

ROADSTER. A horse accustomed to travelling on the road

ROBIN, or Robin Redbreast. A pretty little European bird with a red breast, which is very tame, and in winter time comes into the house. The American robin is larger, but is a great favourite, and sings very sweetly.

ROCHE ALUM, or Rock Alum. A mineral salt of a very binding quality.

ROCK. A stony mass, of which mountains are for the most part formed. Rocks are, however, to be met with in immensely large separate masses.

ROCKET. A sort of fireworks, which, when let off, go to a very great height in the air before they burst.

ROCKBIL. A bituminous substance found in rocks.

ROE. An animal of the deer kind: also the spawn of fish; that of the males is called soft roe or melt, that of the females hard roe or spawn

ROGATION WEEK. The week preceding Whitsuntide.

ROLL (in Law). A schedule or parchment which may be rolled up.

ROLLER (in Husbandry and Gardening). A wooden or iron instrument of a circular shape, and fitted for rolling along the ground to level grass land, break the clods of arable land, and to bind the gravel in gravel walks.

ROLLER (in Surgery). A long, broad ligature, for keeping the parts of the body in their places.

ROLLER (in Ornithology) A sort of bird the size of a jay.

ROLLING MILL. A machine for working metals into plates or bars. This sort of mill is chiefly used for drawing out the iron bars, after they have been manufactured into bar iron by the forge hammer.

ROMAN CATHOLICS. Those who hold the doctrines, and submit to the discipline of the Romish church.

ROOD. The fourth part of an acre.

ROOF. The covering of a building.

ROOK. A sociable European bird of the crow kind.

ROOT (in Arithmetic). A number or quantity, which multiplied by itself produces a higher power, as 2, the square root of 4 or the cube root of 8.

ROOT (in Botany). That part of a plant which is under ground, and by which the plant derives its nourishment from the earth.

ROOT (in Grammar). The original words from which others are formed.

ROPE. The larger kind of cordage, formed by the twisting of several strings of yarn together; the smallest sort of rope is called cord, and the larger kinds cable, which is used for the rigging of ships.

ROPEMAKING. The process of twisting yarn into ropes by means of a wheel.

ROPEYARN. The rope of any yarn untwisted

ROSE. A shrub equally celebrated and admired, by both ancients and moderns, for its sweetness and its beauty. The most esteemed species of this favourite shrub, are the hundred leaved rose damask rose, Provence rose, white rose moss rose, &c.

ROSE ACACIA. A prickly shrub, the flower of which resembles the rose in form

ROSEMARY. A medicinal and fragrant plant.

ROSEWATER. Water distilled from roses.

ROSIN. See RESIN

ROSTRUM. A place in Rome where orations were made and pleadings carried on: it was so called from rostrum, the beak of a ship, because it was made of the beaks of the ships taken at Antium.

ROT. A disease among sheep, in which their lungs are wasted and their throats swollen.

ROTACEÆ. One of Linnæus's natural order of plants, consisting of such as have one wheel-shaped petal without a tube.

ROTATION (in Geometry). The circumvolution of a surface round an immovable line, by which solids are conceived to be generated.

ROTTEN STONE. A mineral, found in Derbyshire, which is used for all sorts of finer grinding and polishing, and sometimes for cutting of stones

ROTUNDA, or ROTUNDO. A circular building at Rome, which was anciently called the Pantheon; also any circular building.

ROTUNDITY OF THE EARTH Roundness of form ascribed to the earth from various appearances which serve to prove it, as, for instance, that the masts of a vessel come in sight before the hull is visible.

ROUGE. A red paint extracted from the plant called by botanists the carthamus tinctorius.

ROUGH-CASTING. A kind of mortar used as a covering for external walls which is thrown on roughly, instead of being plastered on.

ROUGHRIDER. A non-commissioned officer in the cavalry, who assists the riding master.

ROUNDHOUSE. In England, a temporary prison in a parish, where those who are apprehended by the constable are confined.

ROUNDHOUSE (among Mariners). The uppermost room or cabin in the stern of a ship, where the master lies

ROUNDS. A watch commanded by an officer, who goes in the night time round a fortress.

ROUND ROBIN. A paper containing a statement of grievances, on the part of any number of discontented persons in the army or navy, who sign their names in a

circular manner, that it may not be seen who signed first.

ROWEL. The pointed wheel in a spur.

RUBELLITE. Red tourmaline containing a considerable proportion of manganese, generally occurring in closely-aggregated crystals, varying from a slight tinge of red to a fine pink.

RUBEZAHL. Number Nip, a famous mountain-spirit of Germany, sometimes friendly, sometimes mischievous, corresponding to English *Puck*.

RUBICELLE. A gem, a variety of ruby, of a yellow or orange red.

RUBICON. A small river which formed the boundary between ancient Gaul and Italy, by passing which, Julius Cæsar, the famous Roman general, declared war against his country. This stream was probably the modern Pisatello.

RUBRIC. The directions given in the Book of Common Prayer.

RUBY. A precious stone, next to the diamond in value Its constituent parts are alumina, silica, carbonate of lime, and oxide of iron.

RUDDER. A piece of timber hung on pinges at the stern-posts of a ship, which, by being turned either way, directs the course of the vessel.

RUDIMENTS. The first elements or principles of any art or science.

RUDOLPHINE TABLES. A celebrated set of astronomical tables, published by Kepler, and thus entitled in honour of the emperor Rudolph or Rudolphus.

RUFF. A European bird, about a foot in length, with long feathers standing out round the neck, like a ruff. The female is called Reeve.

RULE OF THREE (in Arithmetic). A rule which teaches by means of three numbers to find a fourth.

RULE, or RULER. An instrument of wood or metal, marked off, so as to be of use in mensuration.

RULE, SLIDING. A mathematical instrument, serving to perform computations in gauging, measuring, &c., without the use of compasses, merely by the sliding of the parts of the instrument one by another

RULES OF COURT. Certain orders made from time to time in the courts of law, for regulating the practice of the court.

RUM A spirituous liquor distilled from sugar canes.

RUMEN (in Comparative Anatomy) The paunch or first stomach of such animals as chew the cud.

RUMINANTIA, OR RUMINANTS. In zoology, an order of herbivorous animals, provided with four stomachs—the first so situated as to receive a large quantity of vegetable matter, coarsely bruised by the first mastication, which passes into the second, where it is moistened and formed into little pellets, which the animal has the power of bringing again to the mouth to be rechewed, after which it is swallowed into the third stomach, and thence passes to the fourth. It comprehends the antelopes, oxen, stags, musks, and giraffes.

RUNIC. Pertaining to the ancient Goths, or their language and letters. The letters of the alphabet of the ancient Scandinavians, principally formed of straight lines.

RUTHENIUM. A grey metal, very hard and brittle, and very fusible, extracted from the ore of platinum.

RUTILE. Titantic acid of a dark-red color, or reddish brown, occurring in four or eight sided prisms, massive, and in crystals—a mineral found in many places in Scotland.

RYACOLITE. A mineral of a white or grey color, with a vitreous lustre, resembling glassy felspar.

RYE. A cereal of a quality inferior to wheat, but more hardy, and hence much cultivated in northern countries.

## S.

S, the nineteenth letter of our alphabet, as a numeral, stood for seven; in Music, as an abbreviation, it stands for solo; in navigation, for south; S. E., for south east; S. W., for south west; S. S. E., for south south east; S. S. W., for south south west.

SABBATH. The seventh day, observed by the Jews as a festival or day of rest in commemoration of God's resting on the seventh day, after the work of the creation. The Jewish sabbath commences at sunset on the Friday, and ends at sunset on the Saturday. The term Sabbath is applied by Christians to the Lord's Day, vulgarly called Sunday, which has been substituted for the Jewish Sabbath.

SABLE (in Zoology). An animal of the weasel tribe having a dark tawny body

It inhabits the northern regions, and is much esteemed for its fur.

SABLE (in Heraldry). The tincture of black represented in engraving by perpendicular and horizontal lines.

SABRE. A sword with a broad, heavy blade, worn by the heavy cavalry.

SABELLIAN. A follower of Sabellius, a philosopher in the third century, who taught that there is only one person in the Godhead, and that the Son and Holy Spirit are only different attributes, or functions of God the Father.

SACKBUT A sort of trumpet fit for playing bass.

SACLACTIC ACID. A powder procured from the sugar of milk.

SACRAMENT. A sign of a holy thing containing a divine mystery.

SADDLE. A seat for a horseman fitted to a horse's back. It is supposed that saddles did not come into use till about the time of Constantine the Great, in the fourth century.

SADDLER. One who makes and sells saddles. The company of saddlers in London is of great antiquity, having been incorporated as early as the reign of Edward I.

SADDUCEES. A sect among the Jews, which were esteemed as deists and free-thinkers.

SAFE CONDUCT. A security given by the king under his great seal to any person, for his quiet coming into, or passage out of his realm.

SAFEGUARD. A protection given by a prince or his general to an enemy's country, to protect it from being ravaged by an army.

SAFETY-LAMP. A lamp invented by Sir Humphrey Davy, for the use of miners in the coal mines, to prevent the fatal explosions which have arisen from the use of common lamps. The safety-lamp transmits its light through a cylinder of iron or copper wire gauze, the apertures in which are not above one twentieth of an inch square As the fire-damp is not ignited by heated wire, the thickness of the wire is of no importance. The principal parts of this lamp are a brass cistern containing the oil, the rim on which the wire gauze cover is fixed, an aperture for supplying oil, a central aperture for the wick, and the wire gauze cylinder.

SAFFRON A bulbous root; also the flower of the crocus; also a substance formed from the stigmata of the crocus officinalis dried on a kiln and pressed into cakes.

SAGITTA A constellation in the northern hemisphere.

SAGITTARIUS. The ninth sign of the zodiac, marked thus ( ♐ ).

SAGO. A simple produced from the pith of a kind of palm growing in the East Indies, called by botanists the cycas circinalis.

SAGOIN. A South American animal about the size of a rabbit.

SAIL. A large piece of canvass composed of several breadths sewed together, which, when extended by means of lines on masts, catches the wind, and drives the vessel along.

SAILING. The conducting a vessel from one port to another, which is the practical part of navigation.

SALAMANDER. A sort of lizard, which exudes from its pores a milky liquor, by which it is enabled for a time to resist the action of fire. From this virtue, it was formerly supposed capable of living in fire.

SAL AMMONIAC A fossil salt which was said to be dug out of the sands of Ammonia in Libya, from which it took its name. There is no native salt of this

name known to the moderns, but a factitious salt composed of a volatile alkaline and the acid of sea salt, whence it is called the muriate of ammonia.

SALARY. The stipend or remuneration made to a man for his services, in distinction from wages, which is for day labour, and pay, which is for military service.

SALE (in Law). Transferring the property of goods from one to another, upon a valuable consideration.

SALESMAN. One who sells clothes or other commodities. It is also applied to one in a mercantile establishment, who sells the goods.

SALIENT ANGLE (in Fortification). An angle projecting outwards.

SALIVA. An excretion from certain glands of the mouth, which serves to moisten the food before it is swallowed.

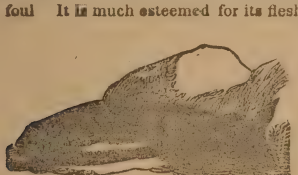
SALIVATION. A drawing humours out of the mouth by mercurial preparations; also a preternatural increase of saliva.

SALLOW. A sort of willow.

SALLY. The issuing of the besieged from their fort and tower, and falling on the besiegers to cut them off.

SALLY PORTS. Doorways on each quarter of a fire ship, out of which the men make their escape into the boats as soon as the train is laid.

SALMON. A fish that lives in either fresh or salt water, but shuns that which is foul It is much esteemed for its flesh.



SALMON TROUT. A species of the salmon, having a body spotted with black.

SALOON. A spacious room much used in Italy as a state room for the reception of ambassadors.

SALOP. A substance brought from Persia, and prepared as is supposed, from a species of the plant botanically called orchis.

SALT. A name given by modern chymists to three sorts of substances, namely, acids, alkalies, and the compounds formed by acids in union with alkalies, earths, and metallic oxides. These latter are salts, properly so called, and are sometimes distinguished from the two others by the name of neutral salts, as Epsom salts, nitre, &c. Salts are likewise distinguished according to the process by which they are prepared. Common salt or bay salt, a muriate of soda, being a compound of muriatic acid and soda, is procured by evaporation from sea water Essential salts are drawn from the juices of plants by crystallization. Fixed salts are made by calcining or reducing the matter to ashes, then boiling it in water, straining off the liquor, and evaporating all the moisture, when the salt will remain in the form of a powder. Volatile salts are procured principally from animal substances or the fermented parts of plants.

SALTER. A dealer in salt or salt fish The company of salters in London were incorporated in the reign of Henry VIII.

SALTPETRE, or NITRE. A nitrate of potash.

SALTS, or SALTCELLARS. A name for the vessel that holds the salt when it is brought to the table.

SALVAGE. A recompense allowed to such persons as have assisted in saving merchandises, ships, &c., from shipwrecks.

SALUTE (in Military Etiquette). A discharge of artillery, or presenting of arms, as a mark of honour or respect to some person of distinction.

SALUTE (in the Navy). The discharge of ordnance, striking of colours, and the like, as testimonies of respect to the ships of an admiral or superior.

SAMARITANS. A sect among the Jews, who rejected all the scriptures except the five books of Moses.

SANCTUARY (in Law). A privileged place, whither, anciently, offenders were allowed to fly, and to remain for some time under protection.

SANDAL. A sort of slipper worn by the Greek and Roman ladies.

SANDAL WOOD. The wood of an Indian tree, remarkable for its fragrance

SANDARACH. A resinous substance exuding from a tree that grows in Barbary.

SANDBAGS. Bags fitted for holding sand or earth, and used in repairing breaches in fortifications, &c.

SANDIVER, or GLASS GALL. A saline matter which rises as a scum in the crucibles in which glass is made.

SANDPIPER A sort of heath bird.

SANDSTONE. A soft, compound stone, consisting of grains of sand, &c. cemented together The principal pic

ces are the grindstone and the filtering stone.

SANGIAC. The governor of a Turkish province.

SANHEDRIM. The supreme council or court of judicature among the Jews.

SAP. The juice or fluid part of a tree, which is a mucilaginous liquid, oftentimes strongly saccharine, so as to yield a large quantity of sugar, and also to furnish a strong fermented liquor.

SAPPERS. Soldiers attached to the engineers, and employed to assist in the labour of sapping.

SAPPHIRE. A hard and precious stone of a beautiful azure or sky-blue colour, nearly as transparent and glittering as the diamond

SAPPING. A working underground to gain the descent of a ditch, counterscarp, &c.

SARCOCOL. A gum resin brought from Persia and Arabia in small grains, and supposed to be the product of a tree called by botanists the penæa sarcocolla.

SARCOPHAGUS. A sort of stone coffins, which consumed the bodies placed in them in the space of forty days. It was used by the ancients sometimes instead of burning the bodies by fire.

SARDONYX. A precious stone, consisting of a mixture of chalcedony and cornelian stone.

SARMENTOSÆ (in Botany). One of Linnæus's natural orders, consisting of plants which have climbing stems and branches, like the vine.

SARSAPARILLA. The root of the rough smilax, a plant growing in Peru. It has a bitterish taste, and is much used in medicine.

SASH (among Carpenters). A frame of wood with panes of glass for a window.

SASH. A girdle round the waist, which in the army is worn by the officers.

SASSAFRAS. A yellow, odoriferous wood of an aromatic scent, common in America.

SATELLITE. A secondary planet moving round another, as the moon does round the earth, so called because it attends the primary planet from rising to setting, after the manner of the satellites who attended on the eastern princes as a guard. Jupiter has four such satellites, Saturn seven, and Herschel six.

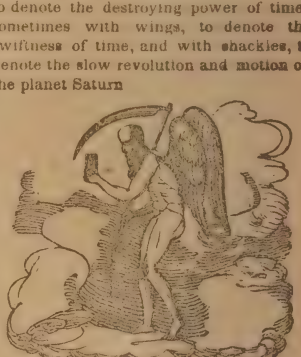
SATIN. A glossy kind of silk stuff.

SATIRE. A biting sort of poetry, written to expose the follies of men.

SATURATION An impregnation of a fluid with as much of any solid substance as it can dissolve Thus water will dissolve about one third of its weight of common salt, and when it holds thus much in solution, it is said to be saturated with it, because, if more be added, it will remain solid.

SATURDAY. The last day in the week, so called from Saturn.

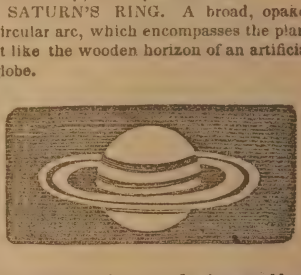
SATURN (in Heathen Mythology). A son of Cœlus and Terra, and the god of time, commonly represented with a sythe, to denote the destroying power of time; sometimes with wings, to denote the swiftness of time, and with shackles, to denote the slow revolution and motion of the planet Saturn



SATURN. One of the primary planets; the tenth in order of distance from the sun, which is thirty years in performing his sidereal revolution. He is marked by this character ♄.

SATURNALIA. A festival at Rome, in commemoration of the golden age, or the age of Saturn, when all men enjoyed their liberty, as the poets tell us.

SATURN'S RING. A broad, opake, circular arc, which encompasses the planet like the wooden horizon of an artificial globe.



SAVOY A sort of winter cabbage with a crumpled leaf, which is greatly improved in flavour by being exposed to frost

SAWMILL. A mill for sawing trees into boards, planks, &c.

SAWYER. A mechanic employed in sawing timber. There are two sawyers to one piece, one of whom is in the pit, or below, and the other stands on the timber

SAXIFRAGE A creeping perennial, so called because it affects rocky or stony places.

SAXON ARCH. A semicircular arch which characterizes the Saxon style

SAXON STYLE A mode of building first used by the Saxons in Great Britain. See ARCHITECTURE.

SCABIOUS. A plant cultivated in gardens, which bears a handsome brown flower

SCABRIDÆ. One of Linnæus's natural orders, including plants with rough leaves, as hemp, fig, &c.

SCAFFOLD. A temporary erection, either for workmen or for spectators.

SCALE (in Mathematics). The degrees of any arch of a circle or of right lines drawn or engraven on a rule

SCALE (in Music). A series of sounds rising or falling towards acuteness or gravity; in Geography, a scale of miles on a map, for measuring the distances of places; in Arithmetic, scale of notation, the order of progression on which any system of arithmetic is founded, as the decennary scale, which computes by tens.

SUBLAPSARIAN. One of those moderate Calvinists who believe that God only permitted the first man to fall into transgression without positively predetermining his fall—that the decree of predestination regarded man as fallen, the elect themselves being in a fallen and guilty state—and that the election of grace was only a remedy for an existing evil.

SUBMULTIPLE. A number or quantity which has a geometrical ratio to another number or quantity, by being contained in it a certain number of times exactly; thus 3 is a submultiple of 21.

SUBNORMAL. In geometry, that part of the axis of a curved line which is intercepted between the ordinate and the normal.—In all curves it is the third proportional to the subtangent and the ordinate.

SCALP. The skin that covers the skull bone.

SCAMMONY. A concreted, resinous juice, light and friable, of a grayish brown colour, and disagreeable smell

SCANNING Measuring Latin verses by the syllables and feet

SCANTLING. The measure, size, or standard, by which the dimensions of any thing, particularly timber, is determined.

SCAPEMENT (in Clock Work). The manner of communicating the impulse of the wheels to the pendulum Common scapements consist of the swing wheel and pallets only

SCAPULA. The shoulder-blade

SCARF. A sort of sash worn by officers in the army, and also by divines, as well as females, over the left shoulder and down the right side

SCARF SKIN. The first and outermost of the three lamina of which the skin is composed.

SCARIFICATION. Incisions made in the skin, as in cupping

SCARP. The slope on that side of a ditch which is next to a fortified place, and looks towards the field.

SCAVENGER. A person whose duty it is to see that the streets be cleansed from filth and dirt.

SCENOGRAPHY. The perspective representation of a body on a plane

SCHEDULE (in Law). A scroll of paper or parchment appended to a will or any other deed; also an inventory of goods, &c.

SCHIST A name given to different kinds of stones of a slaty formation, but particularly those of the argillaceous kind

SCHOLIUM. A note or annotation on an ancient author

SCHOOL. A place set apart for the instruction of youth

SCHOOL (in Philosophy). A system of doctrine as delivered by particular teachers, as the Platonic school, the school of Aristotle, &c.

SCHOOL (in Theology). The age of the church and the form of divinity that succeeded the fathers.

SCHOOL (among Painters). The style and manner of painting among the great masters of the art at any particular period, as the Italian, Flemish, Dutch, Spanish, and English schools

SCHOONER. A small, fast sailing vessel with two masts, whose main and fore sails are suspended by gaffs, reaching from the mast to the stern

SCHERIF. A title in the East given to the descendants of Mohammed through his son-in-law Ali and daughter Fatima; given also to the chiefs of Mecca and Medina; an emir.

SCIAGRAPHY. The art of finding out the hour of the day or the night by the shadow of the sun or the moon.

SCION. A graft or young shoot of a tree.

SCIOPTIC. A sphere or globe of wood with a hole, in which is placed a lens, so constructed that it may be turned round every way, and used in making experiments in a darkened room.

SCIRE FACIAS. A writ of execution which lies a year and a day after judgment given.

SCIRRHUS. A hard tumour of some gland.

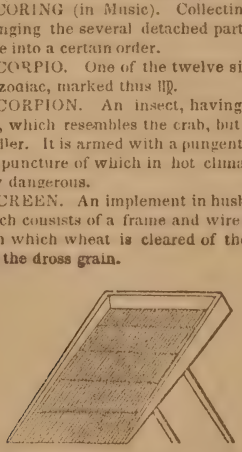
SCITAMINEÆ. One of Linnæus's natural orders, comprehending ginger, cardamom, spices, and other aromatic plants.

SCORING (in Music). Collecting and arranging the several detached parts of a piece into a certain order.

SCORPIO. One of the twelve signs of the zodiac, marked thus ♏.

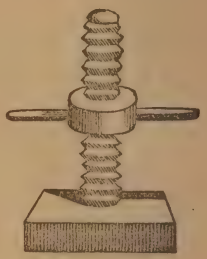
SCORPION. An insect, having eight legs, which resembles the crab, but much smaller. It is armed with a pungent sting, the puncture of which in hot climates is very dangerous.

SCREEN. An implement in husbandry which consists of a frame and wire work, with which wheat is cleared of the dust and the dross grain.



SCOUTS Horsemen sent out some distance before the army, in order to discover the movements of the enemy.

SCREW. One of the six mechanical powers, consisting of a spiral thread or groove cut round a cylinder: when the thread is on the outside, it is a male or convex screw; but when it is cut along the inner surface of the cylinder, it is a female screw, otherwise called a nut.



SCRIBE. A doctor in the Jewish law, whose business it was to write and interpret the scripture.

SCRIBING (among Carpenters). Fitting the edge of a board to the side of another.

SCRIP A bag formerly carried by pilgrims.

SCRIP (in Commerce). That part of any loan which remains unpaid for by the subscribers.

SCRIVENER. One who draws up and engrosses writings. The company of scriveners in London was incorporated in 1616.

SCROFULA. A disease consisting of hard swellings in the glandules of the neck and ears.

SCRUPLE. A small weight equal to twenty grains.

SCRUPLES ECLIPSED. That part of the diameter of the moon which enters the shadow.

SCRUTINY (in Law). An examination of suffrages or votes at an election, for the purpose of ascertaining whether they are good or not.

SCULPSIT, or Sculp, annexed to an engraver's name, denotes that he engraved or carved the piece.

SCULPTURE. An art which comprehends not only carving in wood, stone, or marble, but also enchasing, engraving in all its kinds, and casting in bronze, lead, wax, &c.

SCULL A little oar for rowing a boat with.

SCULLER. A boat rowed with sculls.

SCUM. That which rises to the top of any liquor.

SCURF. A scaly swelling raised in the skin of the head.

SCURVY. A disease, the symptoms of which are yellow spots on the hands and feet, weakness in the legs, a foul breath, &c. It arises from eating too much salt provisions.

SCUTTLES. Square holes cut in the deck of a ship, large enough to admit a man.

SCYLLA. A rock in the sea between Sicily and Italy, which was very formidable to the mariners among the ancients. It was opposite to the whirlpool Charybdis.

SCYTHE. An instrument for mowing. It consists of a thin steel blade attached at right angles to a handle of six or eight feet long. For cutting corn there is frequently the addition of what is called a cradle. The English scythe is represented below.

SEA. A large tract of water which washes the coast of one or more countries, as the Irish Sea, the Mediterranean Sea, the Red Sea, the Sea of Marmora or the Black Sea, and the Baltic. A sea is less than an ocean.

SEA COW. See Morse.

SEAL, or Sea Calf (in Zoology). A harmless and sagacious animal inhabiting the shores of many islands and countries. The fur seal, is much hunted for its skin.

SEAL. A piece of metal having coats of arms or some other device engraven upon it; also the print in wax made by the seal.

SEAL (in Law). The impression or device printed on wax which is put to any deed by way of ratification. In England the great seal is the seal used for the united kingdom of England and Scotland, and sometimes of Ireland. The privy seal is that which the king uses to such grants, &c. as pass the great seal.

SEALER. In England, an officer in Chancery, who seals the writs and instruments there made.

SEALINGWAX. A hard wax made of gum lac, resin, &c. which is used in sealing letters, &c.

SEALSKIN. The skin of the seal

SEAMEN. Men brought up to the sea life.

SEAMEW. A sea bird about 18 inches in length.

SEAPORCUPINE. A fish found in America, which puffs itself out in the shape of a bladder when enraged.

SEARCHERS. Women appointed to examine all persons immediately after their decease.

SEASONS. The four portions of the year, namely, Spring, when the sun enters Aries; Summer, when he enters Cancer; Autumn, when he enters Libra; and Winter, when he enters Capricorn.

SEA-STAR, or Starfish. An animal inhabiting the sea, which adheres to the bottoms of ships, and renews any of its parts which it loses.

SEA-URCHIN. An animal inhabiting the sea, which is armed with five sharp teeth.

SEAWEEDS. A sort of herbs found floating on the surface of the sea, which are botanically called algæ.

SEA-WOLF. A voracious fish found in the north of Europe.

SEAWORTHY. An epithet for a ship fit for a voyage.

SECOND. Any right angle that cuts another, whether a right line or a curve.

SECOND (in Geometry and Horology). The sixtieth part of a minute, marked thus (″).

SECONDARY (in Law). The second man in any place who is next to any chief officer.

SECONDARY CIRCLES. Circles

which intersect the six greater circles of the sphere at right angles.

SECONDARY PLANETS. Those which revolve as satellites round the primary planets.

SECRETARY. One who is employed in writing letters, &c. for a person.

SECRETION. The separation of some fluid from another in an animal or vegetable substance by means of glands.

SECT A religious party.

SECTION. The cutting of one plane by another.

SECTOR. A mathematical instrument used in measuring proportional quantities.

SECTOR OF A CIRCLE. That portion of a circle comprehended between two radii and an arch.

SECUNDUM ARTEM. By the rules of art.

SECULAR GAMES. Games among the Romans, so called because they were celebrated but once in a seculum or age.

SECULAR PRIEST. One who has not taken monastic vows.

SEDAN. A close chair in which persons are carried by men.

SEDIMENT. Whatever settles or sinks to the bottom of a fluid

SEED. The essence of the fruit of every vegetable, containing the rudiments of the new vegetable.

SEGMENT. Any part of a line in a triangle or other figure, cut off by a perpendicular let fall upon it.

SEGMENT OF A CIRCLE. A part cut off by a chord, or that portion comprehended between an arc and a chord.

SEIGNIOR, Grand The sultan or emperor of the Turks.

SEIGNORY. The jurisdiction and power of a lord

SEIZING. A sea term for binding two ropes together.

SEIZURE (in Law). An arrest of merchandise, that is prohibited or otherwise forfeited.

SELENIUM, or Selenite The sulphate of lime.

SELENOGRAPHY. A description of the face of the moon.

SELLING OUT (among Stockbrokers). A transfer of one's share of stock from one person to another, in distinction from buying in, which is the purchase of the stock held by another.

SELLING OUT (among Military Men in England). The selling one's commission

SEMI. A prefix to many words, signifying half, as semicircle, half a circle; semi colon, half a colon, &c

SEMIMETALS. Fossil bodies not malleable, yet in some measure to be fixed by fire.

SENIORITY. Priority of birth.

SENIORITY (among Military Men). Priority in the time since the raising of any regiment, or an officer's receiving his commission, &c.

SENSE. That faculty of the soul, whereby it perceives external objects by means of impressions made on particular parts of the body, called the organs of sense, and then conveyed to the sensory; the senses are five, namely, seeing, hearing, smelling, taste, and feeling.

SENSIBLE HORIZON. See Horizon.

SENSITIVE PLANTS. Plants of the mimosa tribe, which have the extraordinary property of closing on being touched

SENTICOSÆ. One of Linnæus's natural orders of plants, including the rose, brier, hawthorn, &c.

SENTINEL. A private soldier placed to watch at some post.

SEPIARIÆ. One of Linnæus's natural order of plants, including such as grow wild in hedges or are used for hedges, as the brier, privet, &c.

SEPOYS. Natives who serve in the army in India.

SEPTEMBER. The ninth month of the year, so called because it was Septimus Mensis, the seventh month of Romulus's year

SEPTENNIAL. Every seven years, as septennial parliaments, i. e. new parliaments chosen every seven years, as they are at present appointed in England.

SEPTUAGESIMA. The first Sunday in Lent.

SEPTUAGINT. The Greek translation of the Bible from the Hebrew into the Greek by seventy-two Jewish interpreters, by order of Ptolemy Philadelphus king of Egypt.

SEQUESTRATION (in Law). The separating a thing in controversy from the possession of both parties, till the right be determined by course of law.

SEQUESTRATION (in the Civil Law) The act of the ordinary disposing of the goods and chattels of a person deceased, whose estate no one will meddle with.

SERAGLIO. The palace of the grand seignior.

SERGE. A woollen stuff manufactured in a loom.

SERGEANT, or Sergeant at Law In England, the highest degree taken in the common law, answering to that of doctor in the civil law

**SERGEANT** (in Military Affairs). An inferior officer appointed to teach the soldiers their exercise

**SERGEANTS AT ARMS.** In England, officers appointed to attend the king, arrest offenders, and the like.

**SERIATIM.** Successively, in order.

**SERIES.** A rank or progression of quantities proceeding by some rule, as in arithmetical progression by addition, 1, 3, 5, &c.; and in geometrical progression by multiplication, as 2, 4, 8, 16, &c.

**SERIES, INFINITE.** A series consisting of an infinite number of terms, to the end of which it is impossible to come.

**SERPENTES.** An order in the Linnæan system under the class amphibia, including animals which have no feet, fins, nor ears, and are cast naked on the earth without limbs, but frequently armed with a deadly poison. Under this order are the seven genera, namely, the boa constrictor, the rattlesnake, the viper, the snake, the acrochordus, amphisbæna, and coecilia.

**SERVAL.** A beautiful animal of the cat family, spotted like the panther, and about the size of the lynx It is a native of India.

**SERVICE-TREE.** A tree, the fruit of which is highly astringent; it is used in making brandy and cider

**SERVITOR.** A poor scholar at Oxford in England, answering to a sizer at Cambridge, who attends on other students for his maintenance.

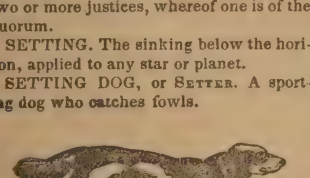
**SERUM.** A thin transparent liquor which forms a part of the blood, and also of milk.

**SESSION.** In England, a sitting of justices in court upon their commission, as the session of oyer and terminer, &c.

**SESSIONS, or QUARTER SESSIONS.** In England, sessions held every quarter by two or more justices, whereof one is of the quorum.

**SETTING.** The sinking below the horizon, applied to any star or planet.

**SETTING DOG, or SETTER.** A sporting dog who catches fowls.



**SET OFF** (in Law). When the defendant acknowledges the plaintiff's demand, but sets up a demand of his own, to set off or counterbalance the debt either wholly or in part.

**SETON.** A sort of issue in the neck, formed by means of horsehair or fine thread drawn through the skin.

**SETS** (among Gardeners). The young plants of white thorn or other shrubs, which are raised as quick for hedges.

**SEWER.** A passage or gutter made to carry water away into the sea.

**SEXAGENARY** One who has lived sixty years.

**SEXAGESIMAL ARITHMETIC.** A mode of computing by sixtieths, such as the division of a degree into sixty minutes, a minute into sixty seconds.

**SEXAGESIMA SUNDAY.** The sixtieth day before Easter.

**SEXTANT.** The sixth part of a circle, or an arc comprehending sixty degrees; also an astronomical instrument like a quadrant, except that its limb only comprehends sixty degrees.

**SEXTON.** An officer who digs the graves, and assists the minister at funerals.

**SEXUAL SYSTEM** (in Botany). The system of classifying plants, invented by Linnæus, and formed from the parts of fructification, as the stamens and the pistils. From the number of stamens are formed the classes monandria, diandria, triandria, &c. for such plants as have one, two, three, or more stamens; from the number of pistils are formed the several orders under these classes, as monogynia, digynia, trigynia, &c. for such plants under each class as have one, two, three, or more pistils

**SHACKLES.** A sort of fetters for malefactors; which confine the legs; also for animals that go astray.

**SHADDOCK.** A shrub, the fruit of which resembles a lemon.

**SHADOW** (in Optics) A privation or diminution of light, by the interposition of an opaque body.

**SHADOWING** (in Painting). The art of duly representing light and shade in a picture.

**SHAFT.** The body of a column.

**SHAFT** (among Miners). A hole like a well, which miners make to free the works from the springs that are in them.

**SHAGREEN.** A kind of rough-grained leather, prepared from the skin of the hound-fish, and used for watchcases, &c.

**SHAMMY, or CHAMOIS.** A soft leather prepared from the skin of the chamois goat.

**SHAMROCK.** A name in Ireland for the trefoil

SHANK. That part of the fore leg of a horse that is between the knee and the second joint next the foot; also the long and cylindrical part of different things, as the shank of a candlestick, &c.

SHARE. The cutting part of a plough.

SHARK. A voracious fish, that inhabits the sea only, and grows to an enormous size

SHARP. A half note, signifying an elevation, marked thus

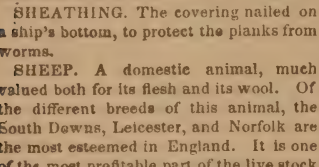
SHEARS A tool made in the form of scissors, for clipping hedges, &c.

SHEATH. A case for a knife or sword.

SHEATH-BILL. A bird inhabiting the South Sea Islands, which has the upper mandible of its bill covered with a sheath.

SHEATHING. The covering nailed on a ship's bottom, to protect the planks from worms.

SHEEP. A domestic animal, much valued both for its flesh and its wool. Of the different breeds of this animal, the South Downs, Leicester, and Norfolk are the most esteemed in England. It is one of the most profitable part of the live stock of a farm, where the lands are dry. In



the United States, the merino breed brought from Spain is preferred for the wool.

SHEEP-SHEARING. The spring season, when the fleeces of the sheep are sheared or cut off.

SHEET. A large linen cloth laid on a bed.

SHEET. A breadth of paper, that admits of being folded into a given form.

SHEET (among Mariners). A rope fastened to the corner of a sail.

SHEIK. In Arabia, the chief or lord of a tribe or clan; among Mohammedans, a title of persons of the higher order who preach in the mosques.

SHEKEL. Among the ancient Jews, a weight of about half an ounce avoirdupois; a coin of about the value of 62 cents.

SHELL. A crustaceous covering of fishes or fruits.

SHELL-FISH. Fish invested with a hard covering, either testaceous, as oysters, or crustaceous, as lobsters.

SHERIFF, or SHIRE-REEVE. In England a reeve or officer of the shire, who, as keeper of the king's peace, is the first man in the county. He is appointed by the king for every county except Middlesex, where he is elected, according to ancient usage, by the livery of London. In the United States, the Sheriff is an officer who attends upon court, has charge of the prisoners, sees to the execution of writs, &c.

SHIELD. A weapon of defence, borne on the arm, to turn off lances; also another name for an escutcheon, by which it is represented.

SHIP. A general name for all large vessels which navigate the seas, particularly those equipped with three masts and a bowsprit, the masts being composed of a lower mast, topmast, and topgallant mast, each of which is provided with yards, sails, &c

SHIP-BUILDING. The practical branch of naval architecture, or the art of constructing vessels according to certain draughts.

SHIP-MONEY An imposition formerly charged upon the ports, cities, towns, &c. of England.

SHIPPING. A general term for whatever relates to ships.

SHIPS OF WAR, commonly called MEN OF WAR. Vessels properly equipped with artillery, ammunition, and all the implements of war necessary for attack and defence. Ships of the first rate or class mount from 100 to 110 guns and upwards; of the second from 90 to 98 guns; third rate from 64 to 74 guns; fourth rate, from 50 to 60 guns; fifth rate, from 32 to 44 guns; and sixth rate, from

20 to 28. Vessels carrying fewer than 20 guns are denominated sloops, cutters, fireships, and bombs.

SHIP-WORM. A testaceous animal, the teredo of Linnæus, that adheres to the bottom of vessels coming from India, and does much damage.

SHIPWRIGHT. One who follows the art of building ships The company of shipwrights in London, was incorporated in the reign of James I.

SHIRE. The Saxon name for a county.

SHOAL. A shallow piece of water, or a shallow part of the sea near the coast.

SHOARS. Props set up obliquely against a house

SHOE. A covering for the foot, made of leather; also the piece of iron nailed to a horse's foot, or under a sledge, &c.

SHOE (among Mariners). A small block of wood on the back of an anchor.

SHORE. A tract of land near the sea.

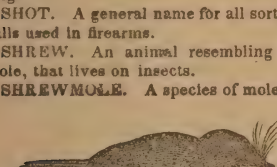
SHORL. A mineral of a black colour.

SHORTHAND, otherwise called STENOGRAPHY. An abbreviated form of writing.

SHOT. A general name for all sorts of balls used in firearms.

SHREW. An animal resembling the mole, that lives on insects.

SHREWMOLE. A species of mole.



SHRIKE. A fierce kind of bird, that preys on lesser birds, and, tearing them to pieces, leaves them sticking on the hedges

SHRIMP A small sea-fish, resembling a lobster

SHROUDS. A sea term for great ropes that come down both sides the masts.

SHROVE-TIDE. The time just before Lent.

SHRUB. A small low tree, between a bush and a tree. It is mostly an ornamental plant, bearing beautiful flowers, as the acacia, lilac, &c

SIBYLS. Prophetesses, or such as professed to be so, among the Romans and Greeks. The Romans preserved their books with great care, and consulted them only on great occasions.

SIDEREAL. Pertaining to any star or planet, as a sidereal day, the time in which any star appears to revolve from the meridian to the meridian again, which is 23 hours 56 minutes 4 seconds and 6''' of mean solar time, there being 366 sidereal days in a year, or in the time of the 365 diurnal revolutions of the sun.

SIEGE. The encampment of an army before a fortified place, with a design take it

SIENITE. A compound granular aggregated rock, composed of felspar and hornblende, with a portion sometimes of quartz and black mica.

SIEVE. An instrument for separating the fine from the coarser parts of powders liquors, grain, &c.

SIGHTS OF A QUADRANT, &c. Thin pieces of brass raised perpendicularly on its side

SIGN (in Arithmetic and Algebra). Any mark used in operation, as $+$ for addition, $-$ for subtraction, $\times$ for multiplication, $\div$ for division, $=$ for equality.

SIGN (in Astronomy). The twelfth part of the zodiac

SIGNALS Notices given to a distant observer, for the purpose of communicating intelligence

SIGNATURE The signing any paper, or putting any mark under a writing.

SIGNATURE (among Printers). A letter of the alphabet, put at the bottom of the page in each sheet.

SIGNET. A seal set in a ring; also the king's seal, wherewith his private letters are signed.

SIGN-MANUAL (in England). The signature to any bill or instrument in the king's own handwriting.

SILICA. One of the primitive earths, which forms one of the constituent parts of all stones, and is found in greatest abundance in agates, jasper, flints, quartz and rock crystal. In the latter, it exists nearly in a state of purity.

SILIQUA. A pod, like that of the pea

SILIQUOSÆ One of the Linnæan natural orders of plants, including those which have siliquæ or pods for their seed vessels, like the pea, bean, lupin, &c

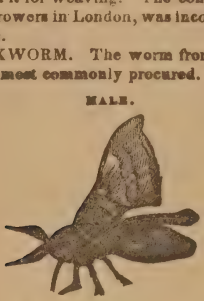
SILK. The production of different species of the caterpillar, particularly the one called by the generic name of the bombyx mori, or silkworm by distinction, which is commonly used in Europe. The silk is found enclosed in two small bags, from which it is drawn in fine threads, to serve the insect as a covering while it lies in the chrysalis state. The balls of silk which the worm spins are called cocoons, which are sold to persons whose business it is to reel them off. A single cocoon is never reeled off separately, it being too weak for that purpose; but in the reeling the

ends of several cocoons are joined and reeled together out of warm water, into which they are put for the purpose of softening their natural gum, and making them stick.

SILK-THROWER, or SILK-THROWSTER. One who throws or spins silk so as to fit it for weaving. The company of silk-throwers in London, was incorporated in 1629.

SILKWORM. The worm from which silk is most commonly procured.

MALE.



FEMALE.



SILVAN. Pertaining to woods, as the silvan nymphs, &c.

SILVER. The whitest of all metals, is considerably harder than gold, but not quite so ductile or malleable. It ignites before it melts, and requires a strong heat to fuse it.

SILVERING. The art of covering the surfaces of substances with a thin coating of silver. It is of particular use for culinary utensils, as it resists the corroding power of vinegar, &c.

SIMILAR (in Mathematics). An epithet mostly applied to figures, angles, &c. which have the same disposition and conformation of the parts.

SIMONY (in England). The corrupt presentation of any one to an ecclesiastical benefice, for money, gift, reward, or benefit.

SIMPLE (in Medicine). What is not mixed with any other thing, as opposed to a compound.

SIMPLE (in Pharmacy). A general name for all herbs which have any particular medicinal virtue.

SIMPLER. One who gathers simples for the druggists.

SIMULTANEOUSLY. At one and the same moment.

SINECURE. An office to which little or no personal service is attached.

SINE DIE, i. e. WITHOUT DAY. A term in law for a defendant who is dismissed court without trial.

SINE OF AN ARC. A right line drawn from one end of an arc perpendicular to the radius drawn to the other end.

SINE QUA NON. What cannot be dispensed with.

SINEW The ligament which joins two bones.

SINGULAR NUMBER (in Grammar) A noun which denotes a single thing.

SINKING FUND. A portion of the public revenue set apart to be applied to the reduction or diminution of the national debt. This measure of appropriating a part of the revenue of the country for the discharge of the public debt was adopted in Holland in 1655, and in the Ecclesiastical States in 1685. But the particular fund so called in England was first adopted by Mr. Pitt.

SIPHON. See SYPHON.

SIR. A title of address to baronets and knights, coupled with their Christian name, as Sir William or Sir John, &c., also a general complimentary form of address.

SIRIUS, the DOGSTAR. A very bright star of the first magnitude in Canis Major

SIROCCO. A periodical wind in Italy and Barbary, which prevails about Easter

SKELETON An assemblage of the

bones of any animal, cleaned, dried, and preserved in their natural position

SIZE. A sort of glue made of the shreds

and parings of leather, parchment, or vellum boiled in water, and strained. It is used by painters, printers, &c.

SIZER. A poor scholar at Cambridge, England.

SKEIN. Any quantity of thread after it is taken off the reel.

SKETCH. The outline of any object, taken in pencil or otherwise.

SKIFF. A small light boat.

SKIN. One of the principal integuments of the body, consisting of three laminæ, namely, the skarf skin which is the outermost; the rete mucosum, the second; and the cutis vera, or real skin, the third.

SKINNER. One who deals in hides or skins The company of skinners in London, was incorporated in 1325.

SKIRMISH. A loose desultory engagement between small parties detached from the armies.

SKULL. The bony part of the head, fashioned in the form of a globe, and consisting of three divisions, namely, the sinciput, or fore part; the occiput, or hind part; and the vertex, or crown.

SKUNK. An animal of the weasel kind, peculiar to North America, remarkable for emitting a fetid smell in self defence.

SKY. The blue expanse of the heavens, or the region which surrounds the earth beyond the atmosphere. Sir Isaac Newton attributes the azure colour of the sky to vapours beginning to condense there, and acquiring a sufficient consistence to reflect the most reflexible rays

SLAB (among Carpenters) An outside plank cut from a tree, which is generally rough and uneven; also a table of marble for hearths, &c.

SLATE. A bluish fossil stone, which is so soft that it can be cut into squares, and used either for the roofs of houses or other purposes.

SLEDGE. A carriage without wheels, used for carrying ploughs or other implements from place to place; also a carriage in Russia, fitted for going along the snow. In Lapland the sledges are drawn by reindeer.

SLEEPERS. Timbers lying next to the ground, or under the boarding of the floor.

SLEIGHT OF HAND, or SLIGHT OF HAND. The tricks of jugglers performed with such dexterity as to deceive the quickest eye

SLIDING-RULE. A mathematical instrument, to be used without compasses in gauging.

SLING. A leathern strap, of which a robber's machine a sling.

SLING (in Surgery). A bandage for supporting a wounded limb.

SLOOP. A small vessel with one mast In the navy, sloops are tenders carrying ten or twelve guns and about thirty men.

SLOTH. An animal remarkable for its slow motion in walking. It climbs quicker than it walks.

SLUG A variety of the snail tribe, that has no shell. It is very destructive in gardens.

SLUG. A cylindrical or cubical piece of metal shot from a gun.

SLUICE. A frame of wood set in a river, &c to raise the water or to let it pass off, as occasion may require.

SMACK. A small vessel used in the fishing trade.

SMALL ARMS. A general name for muskets, fusils, carabines, &c.

SMALL CRAFT. All manner of small sea vessels, as catches, hoys, &c

SMALL-POX. A cutaneous disorder, to which persons are mostly subject once in their lives. If taken by infection, it is often dangerous, but if taken by inoculation, it mostly passes off without any ill consequence. Vaccination or inoculation with the cow-pox, is milder, but not so certain a remedy against future infection.

SMALT. A sort of blue colour used in painting.

SMELL, or SMELLING. One of the five senses, performed by a vascular porous membrane which lines the internal cavity of the nostrils. This is effected by the odorous particles which proceed from external substances

SMELT A fish of the salmon tribe,

which ascends rivers in vast shoals in the spawning season.

SMELTING (in Metallurgy). The fusion or melting of ores, in order to separate the metallic from the earthy or stony parts. The art of fusing ores after washing is one of the most important operations in metallurgy.

SMITH. One who works in iron. The company of blacksmiths in London, was incorporated in the sixteenth century

SMITHERY. The art of working iron into particular shapes as occasion requires.

SMOKE A humid matter, exhaled in the form of a vapour, which ascends from the fire.

SMOKE-JACK. See Jack.

SMUGGLERS (in Law). Those who get prohibited goods, clandestinely and fraudulently imported.

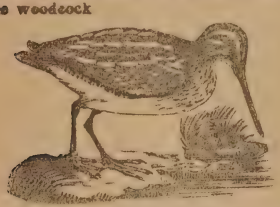
SMUT. A disease in wheat, which consumes the germ and substance of the grain. It is a sort of fungus

SNAIL. A sort of testaceous animal, of which there are numerous species, that vary mostly in regard to their shells. Snails without shells are called slugs.

SNAKE. An amphibious animal, which resembles an eel in its cylindrical body.

SNEEZING. A convulsive contraction of the chest.

SNIPE. A heath bird, nearly allied to the woodcock



SNOW. A well known meteor, formed by the freezing of the vapour in the atmosphere.

SNUFF. A narcotic powder prepared from the leaves of the tobacco plant.

SOAP. A composition of oil or fat, and potashes, or any other alkali. The soft soap is made of potash, and oil or tallow; the Spanish or Castile soap, of oil of olives, and soda or barilla: black soap is a composition of train oil and an alkali.

SOCIETY. A name given to any association of persons uniting together, and co-operating to effect some particular object, as the societies or academies for promoting the cause of literature; charitable societies, for purposes of public charity; missionary societies, for sending missionaries abroad; and the like

SODA. A mineral alkali, sometimes found in a native state, as in the lakes in Egypt, which, being dried by the heat of the sun, leave beds of soda, or natron, as it is there called. Soda is, however, for the most part, procured from a plant, botanically called the salsola soda, which grows among the cliffs on the coast, and also from other plants on the seashore; but, in this case, it is more or less pure, according to the nature of the plant from which it is procured. Soda resembles potash very much, but it is rather more fusible; and when it comes into the air, it crumbles into powder instead of liquefying, as potash does.

SODA WATER. Water impregnated with carbonic acid gas.

SOI-DISANT. Self-styled

SOIL. The ground in a state for cultivation, or for the growth of plants.

SOLAR SYSTEM. That system of astronomy, which is founded on the hypothesis that the sun is the immoveable centre of the universe, round which all the other planets revolve at different distances, and in different spaces of time.

SOLDER. A metallic composition used by plumbers and other artificers, for the purpose of uniting metallic bodies more firmly together. Iron is generally soldered with copper; copper and brass, with tin.

SOLE. An European fish much valued for the table.

SOLECISM. An impropriety of speech contrary to the rules of grammar.

SOLICITOR. A person who is employed in conducting suits in courts of equity

SOLID (in Geometry). A magnitude which has length, breadth, and thickness.

SOLID (in Physics). A body whose minute parts are so connected together as not to yield readily to the impression of external force, in distinction from a fluid.

SOLIDITY. That property of matter by which it excludes every other body from the place which it occupies.

SOLITARY CONFINEMENT. The confinement of prisoners by themselves in cells.

SOLO (in Music Books). A name for any part that is performed by one single person.

SOLSTICE. The time when the sun is at the greatest distance from the equator, namely, 23° 28′; which happens about the 21st of June, when he enters the tropic of Cancer, or the summer solstice, and about the 21st of December, when he enters the tropic of Capricorn, which is the winter solstice

SOLSTITIAL POINTS The two

points in the ciliptic, namely, the first of Cancer, and the first of Capricorn, when the solstices happen.

SOLVENT. Any menstruum or corrosive liquor which will dissolve bodies.

SOLUTION. The intimate mixture or perfect union of solid bodies with fluids, so as seemingly to form one homogeneous liquor.

SOMNAMBULISM. Walking in one's sleep.

SOOT. A volatile matter arising from the smoke of wood or other fuel; or more properly, the smoke itself dried and condensed on the sides of the chimney.

SOPHISM. A specious but false argument, that serves to mislead.

SOUND. That effect or impression on the ear, supposed to be occasioned by the tremulous motion of the air acting on that organ. If this motion be uniform, then it produces a musical note or sound.

SOUND (in Geography). Any great inlet of the sea between two capes or headlands, where there is no passage through, as Plymouth Sound, or that part of the Baltic called by distinction the Sound.

SOUNDBOARD (in an Organ). A reservoir into which the wind is conducted, and thence distributed to the pipes.

SOUNDING (in Navigation). Trying the depth of the water, and the quality of the bottom, by a line with a plummet at the end.

SOUP. A strong decoction of flesh or other substances.

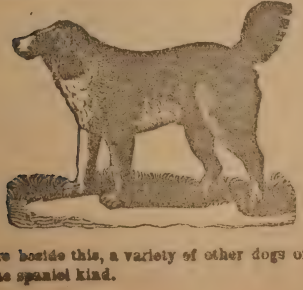
SOW (in the Iron Works). A block or lump of metal worked at once in the furnace.

SPA. A mineral spring.

SPACE (in Geometry). The area of any figure.

SPACE (among Printers). A slip of wood or metal for making a space between words or lines.

SPANIEL. A sort of dog, with a long shaggy coat and pendulous ears. There



are beside this, a variety of other dogs of the spaniel kind.

SPAN. An English measure of nine inches.

SPANISH FLY. An insect which is used in raising blisters.

SPAR. Any sort of earth which breaks easily into cubical or laminated fragments with polished surfaces.

SPARROW. A bird so nearly allied to the finch, that they are classed by Linnæus under the generic name of fringilla. But the sparrow differs in its habits essentially from the finch. It is a mischievous, cunning, spiteful bird, that is very destructive in corn-fields, and in the roofs of houses where it builds. We here speak of the European species. In America, there are several varieties, of which the chipping bird is the most common.

SPARROW-HAWK. A kind of short-winged hawk.

SPASM. An involuntary contraction of the muscular fibres.

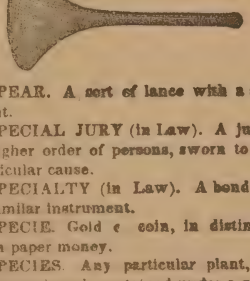
SPATHACEÆ. One of the Linnæan natural orders, comprehending plants very similar to the liliaceous plants, as the narcissus, &c.

SPATULA. An instrument for spreading salves or plasters.

SPAVIN. A disease in the feet of horses, which causes them to swell.

SPEAKER OF THE HOUSE OF COMMONS. In England, a member chosen by the house, and approved by the king, who regulates all their proceedings, and speaks in the name of the whole on all public occasions. The speaker of legislative bodies in the United States has similar duties.

SPEAKING-TRUMPET. A sort of trumpet used at sea, by the help of which persons may hear at a great distance.



SPEAR. A sort of lance with a sharp point.

SPECIAL JURY (in Law). A jury of a higher order of persons, sworn to try a particular cause.

SPECIALTY (in Law). A bond, bill, or similar instrument.

SPECIE. Gold & coin, in distinction from paper money.

SPECIES. Any particular plant, animal, or mineral, contained under a genus.

SPECIFIC. A medicine having a particular efficacy.

SPECIFIC GRAVITY. The relative

proportion of the weight of bodies of the same bulk, which is determined by immersing them in any fluid.

SPECTRUM. A luminous spot formed by a ray of light on a white surface, when admitted through a small hole.

SPECULUM. Any polished body impervious to the rays of light, such as polished metals, looking-glasses, &c.

SPERMACETI. An oily substance found in the head of the physeter macrocephalus, a species of whale

SPHERE (in Geometry). A solid contained under one uniform round surface, such as would be formed by the revolution of a circle about a diameter thereof, as an axis

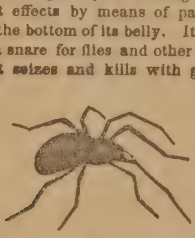
SPHERE (in Astronomy). The concave orb or expanse which invests our globe, and in which the heavenly bodies appear to be fixed, at an equal distance from the eye.

SPHERICS. The doctrine of the sphere, particularly of the several circles described on its surface, with the method of projecting the same on a plane.

SPHEROID. A solid body approaching to the figure of a sphere.

SPHINX. A fabulous monster of Thebes, said to have put forth riddles, and to have killed those who could not expound them; also an Egyptian statue, with the head of a woman and the body of a lion.

SPIDER. An insect which is remarkable for its ingenuity in forming its web, which it effects by means of papillæ or teats at the bottom of its belly. It uses web as a snare for flies and other insects, whom it seizes and kills with great ferocity.



IDER-WORT. A perennial and a flowering plant, cultivated in gardens.

SPINACE. A pot-h

SPINE (in Anatomy). The bony column, which consists of the twenty-four vertebræ of the back.

SPINET A musical instrument something similar to a harpsichord.

SPINNING The act of drawing silk, flax, or wool, into threads, which is performed either by means of a wheel, or by machines particularly constructed for the purpose

SPINSTER (in Law). In England, an addition usually given to unmarried women, from a viscount's daughter downwards. The term is also used in the United States, in application to any unmarried woman.

SPIRACULA. Holes or pores in the abdomen of insects, through which they breathe.

SPIRAL. A curve line, which in its progress always recedes more and more from its centre

SPIRE. A steeple that rises tapering by degrees, and ends in a point.

SPIRITS. A general name for all volatile substances collected by distillation, now confined by chymists to alcohol.

SPLEEN (in Anatomy). A spongy viscus, of a livid colour, lying on the left side of the body.

SPLICING. Joining one rope to another.

SPLINTER. A small shiver of wood or bone suddenly and violently broken off

SPOKES The bars in the wheel of a carriage.

SPONDEE. A foot of two syllables.

SPONGE. A substance which, at one time, was supposed to be a sea-moss growing on rocks, but now discovered to be a sort of zoophyte, that is torpid, and clothed with a gelatinous porous flesh, by which it absorbs or rejects water at pleasure

SPOONBILL. A bird so called from its flat orbicular beak, which is in the shape of a spoon.

SPONTANEOUS. An epithet for things that act of themselves, without any apparent external agency, as the spontaneous combustion of vegetable substances, which when highly dried, and closely heaped, will burst into a flame; so the spontaneous generation of the limbs or parts of animals which have been cut off or destroyed.

SPOTS ON THE SUN, &c. Dark places observed on the sun, moon, and

planets, of the nature of which, little is known at present.

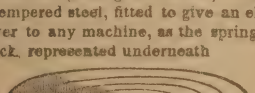
SPRAT. A fish very similar to a herring, but smaller. It is a species of the same genus, under the generic name of clupea

SPRAY. The sprinkling of the sea driven from the top of a wave in stormy weather.

SPRING (in Astronomy). One of the seasons, commencing in the northern hemisphere when the sun enters Aries, about the 21st of March.

SPRING. A fountain or source of water rising out of the ground.

SPRING (among Mechanics). A piece of tempered steel, fitted to give an elastic power to any machine, as the spring of a watch, represented underneath



SPRING COE. A species of African Antelope.

SPRINGER. A lively and pleasant species of dog, very expert in raising woodcocks and snipes

SPRING-TIDES. Tides at new and full moon.

SPRIT. A small boom or pole crossing the sail of a boat diagonally.

SPRUCE. A fluid extracted by decoction from the spruce fir.

SPRUCE-BEER. A cheap and wholesome liquor, made of treacle or molasses, and the essence of spruce, well boiled in water, to which yeast is afterwards added to assist the fermentation.

SPRUCE-FIR. A kind of Scotch or Norway fir, common in America.

SPUNGE. See SPONGE.

SPUNGING-HOUSE (in England). A victualling house, or place of temporary confinement, for persons arrested for debt.

SPUNK. A substance growing on the sides of trees, which serves as tinder.

SPUN YARN. The yarn of untwisted ropes, the ends of which are scraped and beaten thin, to be let into the ends of other ropes.

SPUR. A piece of metal made to fit the heel of the horseman, and armed with a rowel, which is used for urging a horse on.

SPY. A person hired to watch the motions of another, particularly what passes in an enemy's camp.

SQUADRON (in the Navy). A detachment of ships employed in any expedition.

SQUADRON (in the Army). A body of horse, from one to two hundred.

SQUARE (in Geometry). A quadrilateral figure, whose angles are right angles, and sides equal.

SQUARE (in Arithmetic). The product of any number multiplied by itself; also the squares of lineal measures, as a square foot, a square yard.

SQUARE (among Carpenters). An instrument for squaring their work or reducing it to a square.

SQUARE (in Military Affairs.) A body of soldiers formed into a square.

SQUARE-ROOT. A number which, multiplied in itself produces the square number; thus, 2 is the square-root of 4.

SQUIRREL. An agile animal, that climbs dexterously, and leaps nimbly from tree to tree. It lives mostly on seeds and fruit. The most common varieties in North America are the gray, red, and striped

STACK, or RICK. A structure of hay or corn, so formed that it may be thatched by way of defence from the wet. The stem or body of the stack should be about two-thirds, and the roof one-third, of the whole stack. A funnel or chimney, called the well, is frequently left in circular stacks, to prevent their heating too strongly. As a preservative against the wet, while the hay or corn is stacking, rick-cloths are fixed up.

STADIUM. A Greek long measure, equal to our furlong; also the race-course among the Greeks.

STAFF. An ensign of office

STAFF (in the Army). A specified number of officers acting together.

STAFF (among Mariners). A light pole erected in a ship, on which the colours are hoisted.

STAFF-OFFICERS. Those officers who constitute the staff.

STAGE. The elevated place in the area of a theatre, where the actors perform their parts; also any elevated place for the purpose of exhibiting any thing, or of carrying on any work in building

STAGE-COACH. A public vehicle, so called because the horses go only a certain distance at a time, which is called a stage.

STAG-BEETLE. An insect which lives in the decayed trunks of trees.

STAG. An elegant animal, the male of which has branching and recurvate horns. The branches of a well grown stag are at least six or seven. This animal is not found in America.

STALACTITES. A sort of calcareous earths, consisting of carbonate of lime, carbonic acid, and water. It is found suspended from vaults or the roofs of caverns in calcareous mountains.

STALK, Caulis (in Botany). That part of a plant which receives the nourishment from the root, and distributes it to the other parts.

STALL. A particular seat in a cathedral; also a partition in a stable; and an open shop in a market or fair.

STAMEN (in Botany). One of the principal parts of fructification in plants, on which Linnæus's sexual system is founded.

STAMINA. The simple original parts of an animal body, which existed in the embryo.

STAMP. Any instrument with which an impression is made; also in England, paper bearing a particular mark or impression, which is used for receipts, deeds, and other instruments, and for which a tax is paid.

STANDARD. An original weight or measure by which other measures are regulated These measures are committed in England, to the keeping of a magistrate, or deposited in some public place, as the Exchequer.

STANDARD (in Military Affairs). A flag or banner, borne as a signal for the forming of troops into a body The royal standard of England is a flag in which the imperial arms of England, Scotland, and Ireland are quartered, with those of Hanover.

STANNERIES. Tin mines or works.

STAPLE (in England). A town where there were public storehouses for merchandises.

STAPLE COMMODITIES. Articles such as wool, cloth, lead, &c. which might be laid up in the staples or storehouses without damage.

STAR. A general name for the heavenly bodies, but more particularly for what are otherwise denominated fixed stars, as distinguished from planets, comets, satellites, &c. The stars were distinguished by the ancients into different collections, included within imaginary figures called constellations. The particular stars in each constellation have been moreover distinguished, by the moderns, by the letters of the Greek, and also according to their magnitude, from the first or largest to the sixth or the smallest that are visible to the naked eye.

STARBOARD. The right hand of a ship, when looking towards the head or fore part.

STARCH. A powder drawn from wheat flour, and used in stiffening linen.

STAR-CHAMBER (in England). A court where anciently the Lord Chancellor, assisted by others, used to sit to punish riots, forgeries, and other great offences.

STARFISH. See Sea-star.

STARLING. An European bird about nine inches long, that is very docile, and may be easily taught to speak.

STATICS. That branch of the science of mechanics which teaches the properties of bodies in respect to their weight, equilibrium, &c. when in a state of rest See Mechanics.

STATIONER. A dealer in paper, pens, and all writing utensils, &c. The stationers in London, form one of the city companies.

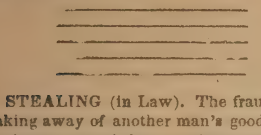
STATUARY. A branch of sculpture employed in the making of statues.

STATUES. Figures of men or other objects formed with the chisel, of marble or stone, &c., or carved in wood, and cast in plaster of Paris, or in different kinds of metals.

STATUTES (in England). Acts of parliament made by the three estates of the realm, which are either public or private. The courts of Westminster must take cognizance of the public statutes without their being specially pleaded, but not so of private statutes. In the United States the

statutes are the laws, enacted by congress or any state legislature.

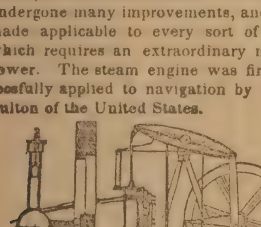
STAVE (in Music). The five horizontal and parallel lines on and between which the notes are placed.



STEALING (in Law). The fraudulent taking away of another man's goods with an intent to steal them, against or without the will of him, to whom they belong.

STEAM. The vapour which arises from the application of heat to water or any other fluid.

STEAM-ENGINE. An engine first constructed by Mr. James Watt, a native of Greenock, for raising water by means of the expansive force of steam. It has since undergone many improvements, and been made applicable to every sort of work which requires an extraordinary moving power. The steam engine was first successfully applied to navigation by Robert Fulton of the United States.



STEEL. Iron refined and purified by fire. It is chemically described as a carburet of iron, or iron combined with a small portion of carbon.

STEEL-YARDS A balance for weighing things.

STEGANOGRAPHY. The art of writing in secret characters or ciphers.

STEINERITE. In mineralogy, a variety of iolite, of a blue color.

STEINMANNITE. A mineral with a fine granular composition and metallic lustre: sp. gr. 6·83; H = 2·5.

STELLATÆ. One of the Linnæan natural orders of plants, comprehending those which have their leaves disposed round the stem in the form of a star

STEM (in Botany). That part of a plant which sustains the root, leaves, and flower.

STEM (in Shipbuilding). The circular piece of timber into which the two sides of the ship are united at the fore end; the fore part of the ship, as opposed to the stern.

STENOGRAPHY, or Short-Hand. The art of writing in short characters instead of words.

STEPPES. Barren tracts of elevated land in Russia, and the northern part of Asia.

STEREOGRAPHY The art of representing solids on a plane.

STEREOMETRY. The science which teaches the measuring of solids.

STEREOTYPE. One entire solid piece of type cast from an impression in gypsum, of a page composed with moveable types.

STERLING MONEY. The lawful money of Great Britain.

STERN. The hindermost part of a ship.

STEWARD (in Law). A term applied in England, to several officers of distinction, particularly the Lord High Steward, who presides at the trial of a peer or the coronation of the king, &c.

STEWARD (in Commerce). One who manages the affairs of another, particularly in the management of estates.

STIGMA (in Botany). The top of the pistil.

STILL. The apparatus used in the distillation of ardent spirits. See Distillation

STILTS. A set of piles driven into the ground plot, for the intended pier of a bridge.

STIMULANTS. Medicines which tend to excite the animal energy.

STING. A weapon in the form of a barbed spear, with which some insects are armed

STIRRUP. The step of a saddle

STIRRUP (in Shipbuilding). A piece of timber put under the keel when some part of it is lost; also the name of some short ropes.

STIVER. A Dutch coin, equal to about a penny.

STOAT. See Ermine

STOCK. The wooden part of many instruments, as the stock of an anchor, the stock of a gun, &c.

STOCK (in the Army). Part of a soldier's dress worn round the neck instead of a neckcloth.

STOCK (in Commerce). Any fund consisting of money or goods employed by a person in trade, particularly the sum of money raised by a company for carrying on any trading concern.

STOCK-BROKER. One who deals in the public funds for others

STOCK-DOVE. An European bird, supposed to be the original stock of the various kinds of pigeons.

STOCK-EXCHANGE. The place where stock is bought and sold.

STOCK-JOBBER. A speculator or dealer in the public stocks or funds.

STOCKING. A covering for the legs, made either of silk, wool, cotton, or thread, &c. knit with the hands or wove in a frame.

STOCKS (in Domestic Policy). The public funds or government securities, which bear an interest, and are regularly bought and sold.

STOCKS (in Law). A mode of confining the legs of disorderly persons by way of punishment, which was ordained by statute

STOCKS (in Shipbuilding). A frame of timber for building pinnaces, ketches, and other small craft; also sometimes small frigates.

STOICS. A sect of philosophers among the ancients, who maintained that pain was no evil, and many other paradoxes of a similar nature.

STOLE, Groom of the. In England, the head officer in the bedchamber of a king or prince.

STOMACH. The membranous, oblong receptacle in the lower region, destined to receive the food and convert it into chyle.

STONE. A hard mineral, that may be used in various ways in building. The principal component parts of stones are silica, alumina, zircona, glucina, lime, and magnesia: sometimes the oxides of iron, manganese, nickel, chronium, and copper are also found to enter into their composition.

STONE-FRUIT. Fruit having its seed enclosed in a stony substance.

STONEHENGE. A pile of huge stones on Salisbury Plain, in England, six miles distant from that city, which is generally admitted by antiquaries to have been a British temple. It consists of the remains of four ranks of rough stones ranged one within another, and sustaining others that are laid across and fastened by mortices.

STONE-WARE. A general name for every thing which is manufactured of earth or clay, particularly the coarser sorts of earthen-ware.

STOP (in Music). The pressure of the strings by performers on the violin and violoncello, by which they are brought into contact with the finger-board.

STOP OF AN ORGAN. A collection of pipes similar in tone and quality, which run through the whole or a great part of the compass of an instrument.

STORAX. The gum benzoin.

STORES, or Naval Stores. The materials laid up in store for the use of the navy, such as ordnance, ammunition, masts, sails, cordage, &c.

STORK. A bird nearly allied to the heron and the crane, with which it is classed by Linnæus under the generic name of ardea. It is a white bird, having the orbits of the eye naked. This bird is a native of Europe, Asia, and Africa, and feeds upon amphibious animals. In Holland and Germany the storks are much favoured, and are to be seen on the tops of the houses, and even in the public streets.

STORMY PETREL. See Petrel

STRAIT, or STRAITS. A narrow arm of the sea shut in by land on both sides, as the Straits of Gibraltar, &c.

STRATUM. A bed or layer, and Strata, the beds or layers, of different earths or mineral substances of which the whole earth is composed.

STREAMER. A flag or pendant in a ship.

STREPDITEROS. A species of Goat, with tall spiral horns, found in the island of Crete.

STRIKE. A measure of capacity, containing four bushels.

STRONTIA. A sort of ponderous earths

STROUDS. The several twists at the end of a cable.

STRUMA. A scrofulous swelling.

STUCCO. A composition of white marble pulverized and mixed with plaster of lime. It is used on walls, or in making ornamental figures.

STUD. A stock of breeding mares, particularly those of the finer sort.

STUDDING SAILS. Light sails extended beyond the skirts of the principal sails.

STUDENT. One studying for his degrees at the university; also one who is preparing himself for the bar.

STUFF. Any sort of thin cloth made of wool or other matter.

STUM. Wine revived by a new fermentation.

STURGEON A large kind of fish, which inhabits the sea, but ascends the rivers annually The flesh of all the species is good.

STYLE. A sort of bodkin with which the ancients wrote on wax or on lead, now used for writing on ivory, leaves, and paper particularly prepared for the purpose.

STYLE (in Dialling). The pin which, by its shadow, points out the hour.

STYLE (in Botany). The columnar portion of the pistil.

STYLE. A name which, in several sciences, denotes a particular rule or method, as in rhetoric and grammar, the manner of expressing one's sentiments.

STYLE (in Chronology). The manner of computing time, which is either old style or new style. By the old style the year consisted of 365 days and 6 hours; but the new or Gregorian style was made to correspond more nearly with the period of the sun's revolution, reckoning the year to be 365 days 5 hours 49 minutes 20 seconds, by retrenching 11 days from the old style. The new style was introduced into Germany in 1700, and in 1752 into England by act of parliament, whereby the 2d of September in that year was reckoned the 14th.

STYLE (in Architecture). A particular mode of erecting buildings, as the Gothic style, Saxon style, &c.

STYPTICS. Substances which have a binding quality, and are used to stop bleeding, &c.

SUB. A prefix which denotes inferiority of rank or defect of quality, as subaltern, subordinate.

SUBALTERN. An inferior officer, acting under the immediate direction of another, as cornets, ensigns, &c.

SUBDIVISION. A division or part under another or greater division.

SUBJUNCTIVE MOOD. A mood of verbs which imply a condition annexed to an affirmation.

SUBLIMATE. Any substance procured by the process of sublimation, particularly the sublimate of mercury, an extremely acrid and violently poisonous preparation

SUBLIMATION. A process by which volatile substances are raised by heat, and again condensed in the solid form.

SUBMARINE. An epithet for what is or happens under the sea or water, as a submarine explosion or submarine navigation, &c.

SUBMULTIPLE. A number or quantity contained in another number or quantity a certain number of times exactly, as 4, which is the submultiple of 24.

SUBORNATION. A hiring or getting persons to swear falsely.

SUBPŒNA (in Law). A writ for summoning witnesses

SUBSCRIPTION. The signing or setting one's hand to a paper; also the giving a sum of money, or engaging to give it, for the furtherance of some common object in which several are interested, as subscriptions in support of charitable institutions, and the like.

SCAGLIOLA. In architecture, a kind of ornamental plaster, or artificial stone, prepared from gypsum and Flanders glue, and made to imitate the colors of marble.

SCALENE. In geometry, a triangle having the three sides unequal.—A scalene cone or cylinder is one of which the axis is inclined to the base.

SCALESIASIS. In physiology, a disease peculiar to swine, which is purely parasitic, and depends for its origin on the introduction into the system of the mature and fecundated ova of Tænia solium. It is sometimes known as the measles; and the malady is most prevalent in those counties in Ireland where pigs are reared.

SUBSTANTIVE. Another name for a noun

SUBSTITUTE (in Law). One delegated to act for another.

SUBSTITUTE (in the Militia). One engaged to serve in the room of another.

SUBSTRATUM A stratum underneath.

SUBTENSE OF AN ARC. A right line opposite to an angle, supposed to be drawn between the two extremities of the arc.

SUBTERRANEAN. Underground, or within the bowels of the earth, as subterranean caverns or subterranean fires.

SUBTRACTION. The taking of one number or quantity from another, expressed by this character —; as 5—3=2.

SUBTRAHEND. The quantity to be subtracted.

SUCCEDANEUM. A medicine substituted for another.

SUCCINIC ACID An acid drawn from amber

SUCCOTRINE ALOES. A sort of aloes obtained from a species of the aloe, namely, the aloe perfoliata of Linnæus.

SUCCULENTÆ. One of the Linnæan natural orders of plants, including the juicy evergreens, as the mesymbrianthemum, &c.

SUCKER. The piston of a pump; also a piece of leather laid wet upon a stone, which owing to the pressure of the atmosphere, adheres very closely, and is not to be pulled off without great force.

SUCKER (in Botany) A young twig shooting from the stock.

SUCKER (in Ichthyology). A sort of fish, that adheres so firmly that it cannot be removed without great difficulty.

SUCKING-FISH. A fish having a fat naked head and a naked body, which adheres very firmly to the bottom and sides of vessels. It was called by the ancients remora, and in the Linnæan system echineis remora.

SUFFERANCE. A term in law, applied to tenants. A tenant at sufferance, is one that continues after his estate is ended, and wrongfully holdeth against another.

SUFFRAGAN. A bishop that is subordinate to an archbishop

SUFFRAGE. A vote at an election in favour of a person.

SUGAR. A sweet substance procured from many plants or parts of plants, as from the stem of the maple, birch, &c.; the root of the carrot, beet, &c.; the leaf of the ash, the grain of wheat, &c.; but particularly from the sugar-cane by boiling the expressed juice with quick lime or vegetable alkali. Sugar is made, principally in the West Indies and in the Southern United States.

SUGAR-BAKING. The process of refining the raw sugar after it comes from the sugar plantations.

SUGAR-CANE. A plant growing in the East and West Indies, and other tropical countries, which consists of a knotted reed, that rises sometimes to the height of twenty feet, but reeds of a more moderate size are preferred, that are full of juice. From this, sugar and molasses are made.

SUGAR OF LEAD. Acetate of lead.

SUI GENERIS. Of its own nature or kind.

SUIT. An action at Law

SULPHATES Salts formed by the union of sulphuric acid with different bases, as the sulphate of soda, called Glauber's salts; the sulphate of magnesia, called Epsom salts; so the sulphate of copper the sulphate of zinc.

SULPHITES. Salts formed by the union of sulphurous acid with the different bases.

SULPHUR A simple combustible substance, vulgarly called brimstone, which is found pure in great abundance. In combination with metals it forms the ores called pyrites. It is a nonconductor of electricity, and becomes electric negatively by friction. Its specific gravity is 1.990. &c.

SULPHUR, Flowers of. A powder procured from sulphur when it is heated to the point of 170 degrees

SULPHURETS. Compounds of sulphur with different alkaline earths and metallic bases, as the sulphuret of lime, of potash, &c.

SULPHURIC ACID. An acid containing sulphur (its basis), and oxygen. Concentrated sulphuric acid is called oil of vitriol

SULPHUROUS ACID. An acid formed by the combination of sulphur with a less degree of oxygen than is requisite to form sulphuric acid

SULTAN. The title of the emperor of the Turks. He resides at Constantinople. Many inferior Arabic princes are styled sultans.

SUMACH. A shrub which grows naturally in Syria, Palestine, Spain, and Portugal. From its roots, when dried and ground at the mill, is procured a powder used in tanning and dyeing.

SUMMER. One of the four seasons of the year, beginning, in the northern hemisphere, when the sun enters Cancer, about the 21st of June.

SUMMER (in Architecture). A main piece of timber that supports a building.

SUMMONS (in Law). A citation by virtue of which any man is called to appear before a magistrate or judge.

SUMPTUARY LAWS. Laws regulating dress and domestic diet.

SUN. The great luminary, supposed, according to the Copernican system, to be the immoveable centre of the universe, having all the planets revolving around him at different distances, and in different periods of time. He is marked thus, ☉

SUNDAY. The sabbath or Lord's Day

SUN-FLOWER. A plant, the yellow flower of which expands like the rays of the sun

SUPER. A prefix signifying excess, as superabundant, superannuated, &c

SUPERANNUATED. Past the fixed or stated time. Soldiers are superannuated who are too old for active service: boys are superannuated when they are too old to be admitted into any institution.

SUPERCARGO. One who takes charge of a cargo or lading.

SUPERFICIES. A magnitude bounded by lines.

SUPERLATIVE. The highest degree of comparison expressed by adjectives.

SUPERNATURAL. Beyond or out of the course of nature.

SUPERNUMERARY. Above the fixed or stated number, as soldiers attached to a regiment which has already its complete number

SUPERSCRIPTION. A writing on the outside of a paper or any other object.

SUPERSEDING (in Law). In England, setting aside a bankruptcy.

SUPERSEDING (in the Army and Navy). Taking the place of another by special appointment

SUPPLIES In England, extraordinary grants to government by parliament.

SUPPORTERS (in Heraldry). Ornaments without the escutcheon, which, as in the annexed figure, seem to bear it up or support it

SUPPORTERS (in Architecture) Images which serve to bear up any part of a building in the place of a column.

SUPPRESSION. The stoppage of any fluid.

SUPPURATION. The gathering of pus or matter in a boil or wound.

SUPREMACY (in England). The supreme and undivided authority of the king over all persons and things in his realm, whether spiritual or temporal, which is denied to him by the members of the Romish church according to the tenets of their religion.

SURCHARGE. Any extra charge made by assessors, upon such as neglect to make due returns of the taxes to which they are liable.

SURCINGLE. The girdle with which clergymen bind their cassocks; also a girth for horses.

SURD. A number or quantity that is incommensurable to unity, as the square root of 2 or the cube root of 10.

SURETY. One that gives security or another.

SURF. The swell of the sea breaking upon the shore.

SURGE. A large wave rising above the waters of the sea.

SURGEON. One who cures by manual operation or external applications.

SURGERY. The art of curing or alleviating diseases by local and external applications, or operations by means of the hand or of instruments

SURRENDER. A deed or instrument testifying that the tenant yields up the estate to him that hath the immediate estate in remainder or reversion

SURRENDER OF A BANKRUPT The surrendering or giving up all his property into the hands of his creditors or their assignees.

SURVEYING. The art of measuring the area or superficial contents of lands, grounds, fields, &c. by the help of proper instruments.

SURVEYOR. One who follows the art or business of surveying.

SURVEYOR (in Law). One who surveys or superintends any business, as the surveyor of the highways, a parochial officer who sees that they are kept in repair, &c.

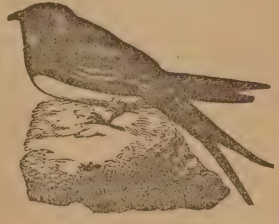
SURVIVOR (in Law). The longer liver of two tenants.

SUSPENSION, or POINTS OF SUSPENSION. Those points in the axis or beam of a balance, wherein the weights are applied, or from which they are suspended.

SUTLER A victualler that follows a camp.

SUTURE. The union of bones by means of dentiform margins.

SWALLOW A bird that builds its



nest in the corners of barns. The swallow is the harbinger of spring

SWAN. A noble bird, nearly allied to the goose, with which it is classed by Linnæus under the generic name of the anus. A species entirely black has been recently discovered in New-Holland.

SWARD. The coat of grass on a meadow.

SWARTH. The row of grass as it falls from the scythe of the mower.

SWEEPS. Large oars used on board ships of war.

SWEEPSTAKES. The different stakes laid down by several persons, which all go by a sweep to one.

SWEET PEA. An annual which bears a beautiful sweet-smelling flower.

SWIFT. A sort of lizard which moves very swiftly; also a sort of bird.

SWIMMING. The act of sustaining the body in water, and moving in it as fishes and other animals do naturally, and as man also, by an acquired art, may do.

SWINE-STONE. A sort of calcareous earth.

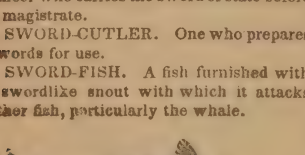
SWIVEL. A small piece of artillery, that may be turned on a pivot in any direction

SWORD. A weapon of offence, worn by a soldier's side

SWORD-BEARER (in England). An officer who carries the sword of state before a magistrate.

SWORD-CUTLER. One who prepares swords for use.

SWORD-FISH. A fish furnished with a swordlike snout with which it attacks other fish, particularly the whale.



SYCAMORE. A large tree like a fig-tree, that grows very fast, and is used in plantations and pleasure-grounds It is vulgarly called Button ball.

SYCOPHANT An informer among the Athenians, who gave information of those that exported figs contrary to law now taken for a cringing, sneaking flatterer

SYLLABLE. An articulate sound formed by a vowel alone, or a vowel and consonant.

SYLLABUS. A list of the chief heads of a book.

SYLLOGISM. A logical argument consisting of three propositions, called the major and minor, which are the premises; and the question which, after it is drawn from the other two, is called the consequence or conclusion: thus, 'every animal has life; man has life; therefore man is an animal.'

SYMBOL. The emblem or representation of some moral quality by some animal or thing supposed to possess the same quality: as, a lion is the symbol of courage, two hands joined together, a symbol of union. These symbols were much used by the ancients in representing their deities, as the eagle, attributed to Jupiter is the symbol of his power.

SYMMETRY. A due proportion of all the parts to one another and to the whole

SYMPATHETIC INK. A kind of ink which, when written with, is invisible until it is held to the fire. It is made from the solution of lead, bismuth, gold, and green vitriol.

SYMPATHETIC POWDER. A powder prepared from green or blue vitriol.

SYMPHONY. A consonance or concert of several sounds agreeable to the ear, whether voca. or instrumental.

SYMPTOM. A sign or mark by which the nature of the disorder is discovered.

SYNALOEPHA. A contraction of two vowels into one.

SYNCHRONOUS. Happening at the same time.

SYNCOPE (in Medicine). A fainting or swooning.

SYNCOPE (in Grammar). Taking a letter out of a word.

SYNCOPE (in Rhetoric). A concise form of speech.

SYNCOPE (in Music). The division of a note.

SYNDIC. A magistrate in Germany.

SYNOD. An assembly of the clergy.

SYNOD (in Astronomy). A conjunction of heavenly bodies, or concourse of two planets in the same optical place of the heavens.

SYNODICAL MONTH. The period wherein the moon departing from the sun, returns to a conjunction with him again. this is twenty-nine days, twelve hours

forty-eight minutes, twenty-eight seconds.

SYNGENESIA (in Botany). One of the Linnæan classes, containing plants the stamina of which form a cylinder.

SYNONYMES. Words of the same or similar signification, which serve to amplify a subject.

SYNOPSIS. A general view of a subject.

SYNOVIA. An unctuous fluid secreted within the capsular ligaments of the joints, which serves to lubricate them and facilitate their motion.

SYNTAX. That part of grammar which treats of concord and government.

SYNTHESIS (in Mathematics). A method of composition, as opposed to analysis.

SYPHON, or SIPHON. A bent tube used in drawing off wine, liquors, and other fluids out of a vessel.

SYRINGA. A flowering shrub planted in gardens.

SYRINGE. An instrument that admits of any fluid, and expels it again at pleasure.

SYRUP. A thick composition, formed from the juices of herbs and fruits boiled with sugar.

SYSTEM. An assemblage or chain of principles, the several parts of which depend upon or are connected with each other. Systems vary in different sciences according to the hypothesis on which they are founded, as in astronomy, the Copernican or Ptolemaic system; in botany, the system of Tournefort, Ray, Linnæus, &c

SYSTEM (in Music). An interval compounded or supposed to be compounded of several lesser intervals.

SYZIGY (in Astronomy). The conjunction or opposition of any planet in regard to the sun

## T

T, the twentieth letter of the alphabet, stands as an abbreviation amongst the Roman writers for Titus, Tiberius, &c.

TABBY. A rich kind of silk that has undergone the process of being tabbied.

TABBYING. The passing any silk or stuff through a calender, the rollers of which are variously engraven, so as to give the surface a wavy appearance.

TABLE. A level surface raised above the ground, of various forms, and used for meals and various other purposes.

TABLE (in Perspective). The transparent or perspective plane.

TABLE (in Arithmetic). Any series of numbers formed so as to expedite calculations, as the tables of weights and measures.

TABLE (in Astronomy). Computations of the motions and other phænomena of the heavenly bodies.

TABRET. A small drum.

TACIT. Not expressed, as a tacit confession, one that may be inferred sometimes from a person's silence.

TACKING. Changing the course.

TACKLE, or TACKLING. The general furniture of a ship particularly the ropes and the assemblage of blocks by which heavy bodies are moved.

TACTICS. The science of disposing either an army or a fleet of ships, and regulating their movements for the more effectual attainment of the ends proposed.

TADPOLE. A frog in its unformed state.

TAFFETY. A fine sort of silk remarkably glossy.

TALC. A soft kind of earth, soapy to the touch, and composed of magnesia, alumine, and silica.

TALENT. A money of account among the Jews and Greeks. The Jewish talent of silver was equal to $1710.00, and that of the Greeks to $970.00. The Jewish talent of gold was equal to $22,800.00.

TALENT. A weight among the Jews, containing one hundred and eighty-nine pounds eight ounces fifteen pennyweights and seventeen grains The talent among the Egyptians and Greeks did not weigh so much.

TALES (in Law) Jurors added to make up the number wanted.

TALLOWCHANDLER. A maker and vender of tallow candles, as distinguished from a waxchandler. The company of tallowchandlers in London, was incorporated in 1461.

TALLOW TREE. A tree in China which produces an unctuous juice, of which candles are made.

TALLY. A cleft piece of wood on which an account is scored

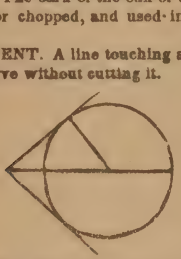
TALMUD. The book of the oral law of the Jews, containing their laws, customs, and traditions.

TAMARIND. The fruit of an Indian tree, which has an agreeable acidity combined with sweetness. It is used very much in medicine.

TAMBOUR (in Fortification). A kind of work formed of palisades.

TAN. The bark of the oak or other tree ground or chopped, and used in tanning leather.

TANGENT. A line touching a circle or other curve without cutting it.



TANNIN. The substance procured from tan, by macerating it in cold water; this has the property of forming with animal gelatine a tough insoluble matter, and is therefore used in converting skins into leather by the process of tanning.

TANNING. The process of preparing leather from the skins of animals, which, after being cleared of the hair, wool, and fleshy parts by the help of lime, scraping, and other means, are macerated in an astringent liquor formed from the bark of the oak tree. This is usually done by putting into the tan pit, layers of ground oak-bark and skins alternately, with the addition of a small quantity of water.

TANREE. A small animal covered with prickles mixed with hair, found in some parts of Asia

TANTALUS. A sort of birds.

TAPESTRY. Cloth woven in figures.

TAPEWORM. A kind of worms resembling a tape in its form, which infests the intestines of the human body, and causes many disorders.

TAPIOCA The starch of the cassava root.

TAPIR. A genus of animals of the class mammalia, order belluinæ, that inhabits South America.

TAR. A thick, black, unctuous substance, obtained from old pines and fir trees.

TARANTULA. The largest of all European spiders, the bite of which was formerly supposed to be venomous.

TARE. An allowance to the buyer for the outside package in the weighing of goods.

TARES. A sort of vetches much used as spring fodder for cattle

TARGET. A kind of shield anciently used by the Scotch; a mark set up to be fired at.

TARGUM. The Chaldee paraphrase of the Old Testament.

TARIFF. A table of the rates or duties agreed upon between two states to be paid upon the goods of their respective countries.

TARPAULIN. A canvass cloth to keep off the rain.

TARTAN. A small coasting vessel in the Levant, having one mast and a bowsprit.

TARTAR. The concreted substance formed on the sides of wine casks.

TARTAR, Cream of. A powder compounded of tartaric acid and potash.

TARTARIC ACID. An acid procured by the solution, filtration, and crystallization of the tartar.

TARTRATES. Salts formed by the combination of tartaric acid with different bases.

TATTOOING. Puncturing the skin and rubbing in a dye, which is practised among the natives of the South Sea Islands.

TASTE. One of the five senses, by which the savour or relish of any thing is perceived. This resides principally in the papillæ of the tongue and palate.

TAURUS. The second sign of the zodiac marked thus ♉; it contains among other stars the two clusters called the Pleiads and Hyades.

TAUTOLOGY. Useless repetition.

TAXES. Impositions laid upon the subject by act of government

TEA. The leaf of a Chinese tree, from which a useful beverage of the same name

has been made ever since its first introduction into Europe in the seventeenth century The tea plant is a native of

China, Japan, and Tonquin, and has not been found growing spontaneously in any other part of the world. It affects valleys, the sloping sides of mountains, and the banks of rivers exposed to the southern rays of the sun. There are two principal sorts of tea, namely, the Green and the Bohea, or black; these are distinguished into different species, according to the nature of the leaf, as of the Greens, the Imperial, Hyson, and Singlo; of the Boheas, the Souchong, Camho, Congo, Pekoe, and Common Bohea.

TEAK TREE. The Indian oak, not equal in durability to the British oak.

TEAL. The smallest of the duck kind.

TEARS (in Anatomy). The limpid fluid secreted by the lachrymal glands.

TEARS (in Chemistry). Any fluid falling in drops, as gums or resins exuding in the form of tears.

TECHNICAL. Pertaining to arts and sciences, as technical terms, terms of art.

TEETH. The hardest and smoothest bones of the body, fixed in the alveoli or sockets of the two jaws, which begin to appear about the seventh or eighth month after the birth, first the dentes incisuri or incisores, the four front teeth of the upper and lower jaw; then the canini, or eye teeth, one on each side the incisores in each jaw; and then the molares, or grinders, mostly ten in each jaw, making altogether thirty-two, although the number varies in different subjects. In the seventh year new teeth are formed, and in the twenty-first the two last of the molares mostly spring up, called the dentes sapientiæ.

TEGUMENTS (in Anatomy). Coverings of the body, as the cuticle, rete mucosum, skin, and adipose membrane

TEINT. An artificial colour.

TEAK. A tree of the East Indies, affording durable timber for shipbuilding.

TELEGRAPH. An instrument by which intelligence can be communicated rapidly to a considerable distance.—*Electro-magnetic telegraph*, an instrument or apparatus for communicating words or language to a distance by means of electricity. There are also the indicator telegraph, which conveys its signals by the movements of pointers; the type-printing telegraph; the symbol-printing telegraph; and the chemical-printing telegraph.

TELEGRAPHY. The art or practice of communicating intelligence by a telegraph.

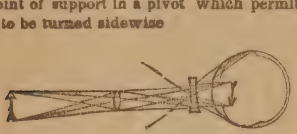
TELENGISCOPE. In optics, an instrument which combines the power of the telescope and the microscope.

TELEPHONE. An instrument for conveying information by sound. The Telephone was first presented to the world at the Centennial Exhibition in 1876; but its introduction as a practical telegraphic apparatus dates from May 4, 1877, when Prof. Graham Bell exhibited it in the Music Hall, Boston.

TELESCOPE. An optical instrument composed of lenses, so situated as to bring remote objects near to the view. To whom we are indebted for the discovery of the powers of this instrument is not precisely known. Wolfius infers from a passage in the 'Magia Naturalis' of John Baptista Porta, that he was the first who made a telescope, and this inference is the more probable as Baptista Porta had particularly directed his attention to optical instruments; but no certain mention is made of any telescope before 1590, thirty years afterwards, when a telescope sixteen inches long was made and presented to Prince Maurice of Nassau, by a spectacle maker of Middleburg, whose name is not exactly known, being called Luppersheim, Jansen and also Hansen. No advances were, however, made in the construction of telescopes before the time of Galileo, who while at Venice accidentally heard that a sort of optic glass was made in Holland, which brought distant objects nearer, and considering how this thing might be, he set to work and ground two pieces of glass into a form, as well as he could, and fitted them to the two ends of an organ pipe, with which he produced an effect that delighted and astonished all beholders After exhibiting the wonders of this invention to the Venetians on the top of the tower of St. Mark, he devoted himself wholly to the improving and perfecting the telescope, in which he was so successful that it has been usual to give him the honour of being the inventor. An anecdote mentioned by F. Mabillon in his Travels, of having met, in a monastery of his own order, with a manuscript copy of the works of Commestor, written by one Conradus in the thirteenth century, and containing a portrait of Ptolemy looking through a tube at the stars, would seem to justify the supposition that this contrivance of facilitating the view of distant objects was of earlier date than is generally considered; but we are not informed whether the tube was furnished with glasses, and very probably tubes were then used to defend and direct the sight, and render the object more distinct by singling it from all other objects in the vicinity. It must not, however, be denied that the optical prin-

ciples upon which the effect of telescopes is founded are as old as Euclid at least, and wanted nothing but accident or reflection to lead to this mode of applying them.

Telescopes are either refracting or reflecting; the former consist of different lenses through which the objects are seen by rays refracted by them to the eye, and the latter consist of specula from which the rays are reflected and passed to the eye. The lens or glass turned to the object is called the object glass, and that next to the eye the eye glass, and when the telescope consists of more than two lenses all but that immediately next the object are called eye glasses. Great improvements have been made in the construction of telescopes, both reflecting and refracting. That constructed under Dr. Herschel's direction is the largest instrument of the kind, and possesses the highest magnifying power of any that was ever made. The tube of this telescope is thirty-nine feet four inches, it measures four feet ten inches, and every part of it is of iron that is rolled, or sheet iron, joined together by a kind of seaming, like the iron funnel of a stove. In order to command every altitude, the point of support is moveable, and its motion is effected by the help of pulleys, so that it may be moved backward or forward and set to any altitude up to the very zenith. The tube is also made to rest with the point of support in a pivot which permits it to be turned sidewise



TELLER. One in a bank, who receives, and pays out money.

TELLERS Those who reckon the votes in any legislature.

TELLERS. In England, officers of the exchequer, who receive all moneys due to the crown.

TELLURIUM. A kind of metal of a blue white colour, soft, brittle, and easily reducible to powder. It melts in a heat something above the fusing point of lead.

TELLUS (in Heathen Mythology). The goddess of the earth; the earth itself.

TEMPERAMENT (in Music). The accommodation or adjustment of imperfect sounds.

TEMPERATURE. The constitution of the air according to the diversity of the seasons, or the different situations of climate and other circumstances

TEMPERING (in Iron Works) Making iron and steel of a suitable degree of hardness or softness.

TEMPERING (among Brickmakers) The duly mixing the materials of which bricks are made, that they may be more easily cut and reduced to the proper shape.

TEMPLARS, or KNIGHTS TEMPLARS An ancient order of knighthood, which was abolished at the beginning of the fourteenth century.

TEMPLE. A place appropriated for the performance of public worship.

TEMPLE (in Anatomy). The upper part on each side of the head, where the pulse is felt.

TEMPORAL. Not spiritual; as the temporal revenues of the church in England, called the temporals, or temporalities.

TEMPORAL (in Anatomy). Pertaining to the temples, as the temporal arteries, &c.

TENACITY. The degree of force with which the particles of bodies cohere or are held together; a term applied particularly to metals which may be drawn into wire, as gold and silver

TENAILLE. An outwork of a fortress.

TENANT (in Law). One who holds lands by any right, particularly one who occupies lands or tenements at a yearly rent, for life, years, or will.

TENCH. A fish with a golden body and transparent fins, that inhabits rivers and ponds.

TENDER (in the Navy). A small ship that attends a larger.

TENDER (in Law). The offering of money in payment of a debt.

TENDON ACHILLES. That which connects the calf of the leg with the heel.

TENDONS. The extremities of the muscles.

TENDRIL. The curling part of plants, as in the vine, with which they lay hold of any thing for support.

TENEMENT (in Law). Any thing which may be holden, particularly houses or any other buildings.

TENNIS. A game with a ball, driven by a racket.

TENNIS-COURT. The place where the game of tennis is played.

TENON. The square end of a piece of timber.

TENOR (in Music). The middle part between.

TENSE. That part of a verb which denotes time, as the present tense, denoting the time that now is; the preterit or past the time that was: and the future, the time that will be Some tenses likew se denote

the state of the action, as to its completeness or otherwise, in a certain degree or time, as the imperfect tense, which denotes an unfinished action at a certain time; the perfect, a finished action at any time; and the pluperfect, a finished action before a certain time.

TENSION. The act of stretching or being stretched, as the tension of the muscles when the body is in motion.

TENTER (in the Cloth Manufacture). A railing constructed to stretch cloths upon.

TENTERHOOK. A particular hook on which things are hung that are to be stretched.

TENURE (in Law). The conditions on which lands and tenements are held.

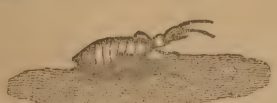
TERCE. A wine vessel containing forty-two gallons.

TERM (in Geometry). The extremity or bound of a magnitude.

TERM (in Law). A fixed and limited time within which courts of judicature are open.

TERM (in the Universities). The fixed periods within which students are obliged to reside for the prosecution of their studies.

TERMES. The white ant, a genus of insects, inhabitants of the East Indies, Africa, and South America, which are said to exceed the common ant, the bee, and the beaver in their skill, ingenuity, and good government. They build pyramidal structures ten or twelve feet high, that resemble villages in extent, and divide them off into several apartments, as magazines, chambers, galleries, &c. They are no less dexterous and remarkable in their manner of providing themselves with food, for they destroy food, furniture, books, and timber with such rapidity, that a beam will be eaten by them to a mere shell in a few hours.



TERMINI. Figures used by the Romans for the support of entablatures, in the place of columns; the upper part consisted of the head and breast of a human body, and the lower of the inverted frustum of a cone. They were so called because they were principally used as boundary marks, and represented their god Terminus.

TERMS OF AN EQUATION. The members of which it is composed.

TERN. A bird of which there are several varieties, as the great, lesser, black and striated. They live on fish, and are sometimes called sea-swallows.

TERRACE. A platform or bank of earth raised and breasted, particularly in fortifications: also a raised walk.

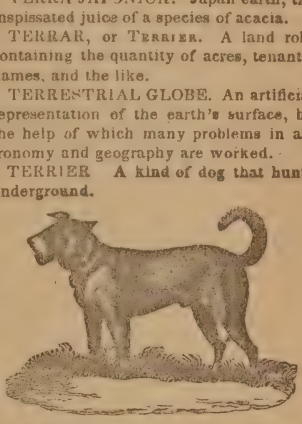
TERRA FIRMA. Main land; the name particularly given to a country of South America, extending from the Atlantic to the Pacific Ocean to the extent of 1368 miles.

TERRA JAPONICA. Japan earth, the inspissated juice of a species of acacia.

TERRAR, or TERRIER. A land roll, containing the quantity of acres, tenants' names, and the like.

TERRESTRIAL GLOBE. An artificial representation of the earth's surface, by the help of which many problems in astronomy and geography are worked.

TERRIER. A kind of dog that hunts underground.



TEST (in England). An oath prescribed by act of parliament for renouncing the pope's supremacy, &c.; also the Sacramental Test, which was formerly required as the qualification of taking an office, but is now abolished.

TEST (in Chemistry). A term applied to any substance which serves to detect the presence of a poisonous ingredient in a composition; also a cupel or pot, for separating base metals from gold or silver.

TESTACEA. Testaceous animals, or shell fish; the third order of animals under the class vermes, in the Linnæan system.

TEST ACT (in England). An act of parliament which required all persons to take the sacrament according to the rites of the church of England, on their acceptance of a public office. This act is so far repealed as relates to the sacramental test for which a declaration is substituted, signifying that the party will do nothing to the injury of the established religion of England.

TESTAMENT (in Law). The solemn act whereby a man declares his last will as to the disposal of his estate after his death.

TESTAMENT (in Theology). Each of the volumes of the Holy Scriptures, that in the Old and the New Testament.

TESTATOR. A man who makes his will.

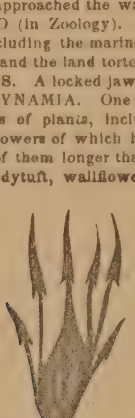
TESTATRIX A female who makes her will.

TESTUDO. A machine among the ancients, which served to screen the soldiers when they approached the walls to mine.

TESTUDO (in Zoology). A genus of animals, including the marine turtle, the river turtle, and the land tortoise.

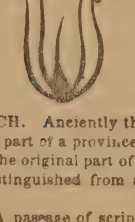
TETANUS. A locked jaw.

TETRADYNAMIA. One of the Linnæan classes of plants, including those plants the flowers of which have six stamens, four of them longer than the other two, as candytuft, wallflower, cabbage, &c.



TETRAGYNIA An order of plants under several classes, in the Linnæan system, the flowers of which have four pistils.

TETRANDRIA. One of the Linnæan classes, comprehending plants the flowers of which have four stamens, as the scabious, holly, plantain, &c.



TETRARCH. Anciently the governor of the fourth part of a province.

TEXT. The original part of an author's work, as distinguished from any note or commentary

TEXT. A passage of scripture chosen as the subject of a sermon.

TEXT (in Printing or Writing). A particular kind of handwriting or form of letters, used by lawyers and others.

THANE. A baron among the Saxons.

THAUMATURGUS. A worker of miracles; a title given by the Roman Catholics to some of their saints

THEATRE. A building constructed for dramatic exhibitions, with a stage for the performers, and pit, boxes, and galleries for the audience.

THEOCRACY. A government whereof God himself is the king, as that of the Jews before they were governed by king Saul.

THEODOLITE. An instrument used in surveying, for taking angles, &c. This instrument is supported on three staffs, screwed into bell metal joints that are moveable, having a limb, or a strong bell metal ring, upon which are three moveable indexes, a bell metal double sextant, within which is a spiral level, and over it a telescope, all suitably adjusted with screws

THEOLOGY. The study of religion, or the science which instructs in the knowledge of God and divine things.

THEOREM. A position laid down as truth.

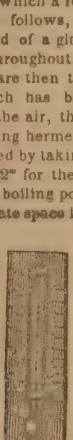
THEORY. A doctrine which confines itself to the speculative parts of a subject, without regard to its practical application or illustration.

THERAPEUTICS. The healing art.

THERMÆ. Hot baths.

THERMOMETER. An instrument for measuring the temperature of the air, as respects heat and cold, founded on the principle that the expansions of matter are proportional to the augmentations of the temperature. The invention of the thermometer has been ascribed to different authors, to Cornelius Drebbel of Alcmaar by his countrymen Boerhaave and Muschinbroeck; to Father Paul, by his biographer Fulgenzio; to Galileo by Vincenzio Viviani; but Sanctorino assumes the invention to himself, and his claim is fully admitted by Malpighi and Borelli. The first form of this invention was the air thermometer, consisting of a glass tube connected at one end with a large glass ball, and at the other end immersed in an open vessel or terminating in a ball with a narrow bottom. The vessel was filled with a coloured liquor that would not easily freeze, as aquafortis tinged with a solution of vitriol or copperas. The ball at the top being then moderately warmed, the air contained in it was in part expelled, and then the liquor pressed by the external air entered at the lower ball and rose to a certain height in the tube, according to the temperature. The air being found not so fit for measuring with accuracy the variations of heat and cold according to this form of the thermometer, which was first adopted, alcohol or spirit of wine,

was used by the Florentine academy, enclosed in a very fine cylindrical glass tube, having a hollow ball at one end, and hermetically sealed at the other. To the tube is applied a scale, divided from the middle into one hundred parts, upwards and downwards. As spirit of wine is capable of a very considerable degree of rarefaction and condensation by heat and cold, when the heat of the atmosphere increases the spirit dilates, and consequently rises in the tube; and when the heat decreases the spirit descends. As inconveniences were found to attend each of these thermometers, as also that of M. Reaumur, which was constructed in a similar manner, Mr. Fahrenheit first employed mercury for this purpose, which has since been universally adopted. The method of constructing his thermometer, of which a representation is here given, is as follows, a small ball is blown at the end of a glass tube, of an uniform width throughout. The ball and part of the tube are then to be filled with quicksilver which has been previously boiled to expel the air, the open end of the tube then being hermetically sealed, a scale is constructed by taking the two fixed points, namely, 32° for the freezing point and 212° for the boiling point, and dividing the intermediate space into equal parts, or 180°



THISTLE. A prickly weed that infests corn fields.

THORACIC. An order of fishes in the Linnæan system, which have the ventral fins placed directly under the thorax.

THORAX. The chest, situated between the neck and the abdomen.

THOROUGH BASS (in Music). That which includes the fundamental rules in composition.

THRAVE, or THREAVE OF CORN. Twenty-four sheaves, or four shocks of six sheaves.

THREAD. A small line made of a few fibres of silk, cotton, or hemp, from which it derives its names of silk, cotton, or thread properly so called.

THRESHING. The beating the grain out of the ears of wheat with a flail.

THRESHING MACHINE. A machine for threshing wheat, instead of the old practice of threshing with a flail.

THRUSH (in Ornithology). A genus of birds, the turdus of Linnæus, of which the principal species are the missel thrush, the throstle or song thrush, in England, the fieldfare, and the black bird. The thrush or throstle, properly so called, is one of the finest singing birds in this country. Its song, which is rich and varied, commences early in the season, and continues for nine months.

THRUSH (in Medicine). A distemper in the mouths of children.

THUNDER. The noise occasioned by the explosion of electrical clouds.

THUNNY. A kind of mackerel.

THURSDAY. The fifth day of the week, so called from Thor, the god of the Saxons and other northern tribes.

THYME. A fragrant herb.

TIARA, or PAPAL CROWN. An ornamental cap formerly worn by the Persians, and since adopted by the Pope. See PAPAL CROWN.

TIBIA. The largest bone of the leg.

TIC DOLOUREUX. A painful affection of the nerves.

TICK. A little insect, one species of which, called the dog-tick, infests dogs.

TIDE. The regular periodical current of water, which when it rises is called the flux, and when it goes back is the ebb or reflux. This is ascribed by Newton to the attraction of the sun and moon, but particularly to the latter, owing to its proximity to the earth.

TIDE WAITER. A customhouse officer who sees to the goods landed on the quay

TIER. A range of cannon mounted on one side of a deck.

TIERCE. A measure of liquids containing forty-two gallons.

TIGER. A large ferocious beast, of the

e tribe, classed by Linnæus with the cat, under the generic name felis. It is a native of the hot climates of Asia, where

it is considered as a scourge. It is of so fierce and sanguinary a nature that it is not to be tamed.

TILE. A thin piece of clay in a flat form, dried and baked so as to fit it for covering the roofs of houses.

TILLAGE The art and practice of cultivating the ground, by ploughing, harrowing, rolling, and other works of husbandry.

TILLER OF A SHIP. A piece of wood fastened in the head of the rudder, by which it is moved. In small ships and boats it is called the helm.

TIMBER. The wood of trees felled and seasoned for the use of the carpenter, as the wood of the oak, fir, elm, ash, beech, chestnut, walnut, lime, sycamore, and birch; of these, however, the oak, ash, and elm are properly denominated timber trees.

TIME. A certain measure or portion of eternity distinguished by the motion of the heavenly bodies.

TIME (in Music). The measure of sounds in regard to their continuance or duration.

TIMEKEEPER. An instrument for measuring time.

TIN. A metal which is very rarely found native. It is one of the lightest metals, its specific gravity when hammered being no more than 7·299, but it is so fusible as to melt at about 442° of Fahrenheit.

TINCTURE. A solution of any substance in spirit of wine.

TINMAN. A manufacturer of tin.

TINNING. The art of covering iron or copper with a coat of tin, by immersing the plates into melted tin This is one of the most useful purposes for which tin is employed, as it renders iron fit for various uses which, on account of its tendency to rust, would otherwise be unavailable.

TIN PLATE, otherwise called WHITE IRON. Iron covered with tin.

TIPSTAFFS (in England). Officers that attend upon the judges of the King's Bench, and also take persons into custody.

TIRE. The iron brace that goes round a wheel.

TISSUE. Stuff made of silk and silver.

TITANIUM. A newly discovered metal of an orange red colour. It is very brittle, but so refractory that it can scarcely be reduced.

TITHE (in England). The tenth part of all fruits, which is due to the parson of the parish. The great tithes are chiefly corn, hay, and wood: other things of less value are comprehended under the name of small tithes.

TITHING. A community of ten men into which all England was divided in the time of the Saxons.

TITLE (in Law). Any right which a person has to the possession, or an authentic instrument whereby he can prove his right

TITMOUSE. A small European bird which feeds on the brains of other birds which it attacks with great ferocity.

TOAD. A reptile of unsightly appearance, which was formerly accounted venomous, but now considered as harmless

It is nearly allied to the frog, with which it is classed by Linnæus under the generic name rana.

TOBACCO. An herbaceous plant, remarkable for its narcotic properties, which

is used either in the leaf, when it is chewed, or cut, when it is smoked It originally

came from the island of Tobago, and was introduced into England by Sir Walter Raleigh.

TODDY. A compound spirituous liquor.

TOGA. The mantle worn by Roman citizens.

TOLERATION ACT. An act passed in the reign of William and Mary in favour of Dissenters

TOLL. A payment in towns, markets, and fairs for goods and cattle bought and sold; also on passing through a turnpike gate.

TOLUFERA. A balsam of the tolu tree, less healing and stimulating than the balm of Gilead

TOMBAC. A metal composed of copper and arsenic.

TON. Twenty hundred weight.

TONE. The degree of elevation which any sound has, so as to determine its acuteness or gravity.

TONGUE. A soft fleshy viscus, which is the organ of taste and speech in man.

TONIC. A medicine which braces the nerves.

TONNAGE. A duty paid at a certain rate for every ton of goods exported or imported.

TONSURE The act of cutting off the hair.

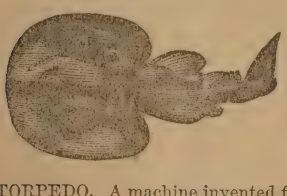
TONTINE. A sort of increasing annuity, or a loan given by a number of persons with the benefit of survivorship.

TOPAZ. A precious stone of the colour of gold.

TOPICS. Common places, or the heads of a discourse.

TOPOGRAPHY. A description or draught of some particular place or tract of land, as of any particular county, city, town, castle, &c.

TORPEDO. A fish which is endowed with a strong electric power



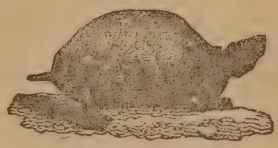
TORPEDO. A machine invented for destroying ships by explosion.

TORRELITE. A mineral composed of peroxide of cerium, silica, protoxide of iron, alumina, lime, and water.

TORNADO. A sudden and vehement gust of wind from all parts of the compass, frequent on the coast of Guinea. It commences very suddenly, several clouds being previously drawn together, when a gust of wind rushing from them strikes the ground in a round spot of a few perches diameter, and thus proceeds for the distance of a mile or more, not in a straight line, but in all directions, tearing up all before it.

TORRID ZONE. That region at the distance of twenty-three and a half degrees from the equator, where the heat of the sun is most violent.

TORTOISE. An amphibious animal that is covered with a hard shell; there are tortoises both on the land and in the water.



TORTOISESHELL. The shell which covers the tortoise is used in inlaying, and for various ornamental purposes.

TORY. A name given to those who hold high principles of government.

TOUCAN. A bird of South America that has a very large bill.

TOUCH, or Feeling. One of the five senses, which is formed by the nervous papillæ of the skin. The sensations acquired by the sense of feeling are those of heat, hardness, solidity, roughness, dryness, motion, distance, figures, &c.

TOUCH (in Coining). A trial of gold and silver in the Mint.

TOUCHHOLE. The vent through which the fire is conveyed to the powder in a gun.

TOUCH-NEEDLE (among Assayers and Refiners). Little bars of gold, silver and copper combined together in all the different proportions and degrees of mixture. These are used in the trial called the touch, to discover the purity of any piece of gold or silver by comparing the

mark it leaves on the touchstone with those of the bars.

TOUCHSTONE. A silliceous sort of stone used in trying metals.

TOUCHWOOD. A sort of agaric that is used as tinder.

TOURNAMENTS. Military sports, where knights used to display their gallantry by encountering each other on horseback with spears or lances.

TOURNEQUET. An instrument for stopping the flow of blood after an amputation.

TOWER. A fortress or citadel, as the Tower of London

TOXICOLOGY. The doctrine of poisons.

TRACHEA. The windpipe, a cartilaginous and membranous canal, through which the air passes into the lungs.

TRADE WINDS. The monsoons.

TRAGACANTH. A gum which exudes from a prickly bush, the astragalus tragacantha of Linnæus, which grows wild in warm climates. The tragacanth is mostly brought from Turkey in lumps.

TRAGEDY. A drama representing some grand and serious action, and mostly terminating in some fatal event.

TRAJECTORY. The path described by any moving body, as a comet describing a curve.

TRAIN. A line of gunpowder, forming a communication with any body that is to be set on fire.

TRAMMEL. A drag net, or large fishing net; also a long net for catching birds.

TRAMMELS. An instrument for drawing ovals on a board; also a kind of shackles for a horse.

TRANSCRIPT. The copy of any original writing.

TRANSFER. The making over stock, &c. from the seller to the buyer.

TRANSFER DAYS. Particular days appointed for the transfer of particular stocks.

TRANSFORMATION. The change out of one form into another, as applied to insects.

TRANSIT The passage of any planet just by or over a fixed star or the sun's disk, particularly the transit of Mercury and Venus, which are interesting phenomena.

TRANSITIVE VERB. A verb which in its meaning passes over to an object, as to love or hate.

TRANSMIGRATION. The passing of the human soul out of one body into another, a doctrine which is ascribed to Pythagoras.

TRANSMUTATION. A supposed power of changing the base metals into gold which alchymists pretended to possess.

TRANSMUTATION (in Chymistry) Any operation by which the properties of mixed bodies are changed.

TRANSPARENCY. The property of some bodies of giving passage to the rays of light, as distinguished from opacity.

TRANSPARENCY (among Painters) Any painting illuminated behind, so as to render it perfectly visible at night.

TRANSPORT. A vessel in which soldiers are conveyed by sea.

TRANSPORTATION (in England) Sending away criminals into a distant country, either for a term of years or for life.

TRANSPORTATION (in Commerce) The carrying of goods by land to a distance.

TRANSPOSITION (in Music). The change made in a composition by which the whole is removed into a higher or lower key.

TRANSPOSITION (in Algebra). The bringing any term of an equation over to the other side.

TRANSUBSTANTIATION. The conversion of the bread and wine according to the doctrine of the Romish church into the actual body and blood of Christ, which is supposed to be miraculously wrought by the consecration of the priest.

TRANSVERSE. A cross, as a transverse axis in conic sections.

TRAP. A sort of mountain rock, composed of horizontal strata.

TRAPEZIUM. An irregular quadrilateral figure.

TRAVERSE (in Law). That which the defendant pleads in bar to avoid the plaintiff's bill

TRAVERSE (in Fortification). A trench made quite across the mote of a place.

TRAVERSE (in Navigation). The variation or alteration of a ship's course

TRAVESTIE. The burlesque imitation of an author's style and composition.

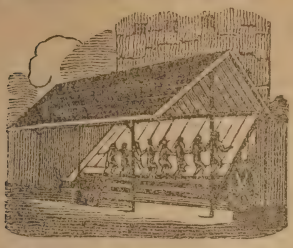
TREACLE The scum of sugar.

TREASON in England is divided into High Treason and Petty Treason. High Treason is an offence against the king or his government, whether it be by imagination, word, or deed. Petty Treason is the crime of a wife killing her husband, or a servant his master. Treason in the United States, consists in overt acts, manifesting a design against the government

TREASUERER. An officer to whose care the treasury of the country or of any company is committed The Lord High Trea-

surer of England has the charge of all the king's money, &c. in the Exchequer.

TREADMILL. A mill for grinding corn, which is moved by persons stationed on the main wheel. It has been introduced into prisons as a sort of punishment.

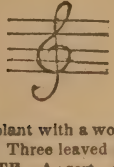


TREASURE-TROVE (in Law). Money or any other treasure found hidden under the earth, which belongs to the king or some other who claims by the king's grant or by prescription.

TREASURY. The place where the public money is deposited.

TREBLE (in Music). The acutest or highest note adapted to the voice of females or boys.

TREBLE NOTE. The note in the treble stave, placed on the line with the cliff.



TREE. A plant with a woody trunk.

TREFOIL. Three leaved grass.

TREMOLITE. A sort of calcareous earth.

TRENCHES. Ditches in fortifications.

TREPAN. A surgical instrument, like a saw, for removing a broken bone from the skull.

TRESPASS (in Law). Any wrong done by one private man to another, either to his person or his property

TRET. An allowance for waste, or for the dirt that may be mixed with any commodity

TRIAD (in Music). The common chord, consisting of the third, fifth, and eighth.

TRIAL. The examination of causes before a proper judge, which, as regards matters of fact, are to be tried by a jury, as regard matters of law by the judge, and as regards records by the record itself.

TRIANDRIA. One of the Linnæan classes, comprehending plants the flowers of which have three stamens, as the crocus, gladiole, valerian, &c.

TRIANGLE. A figure bounded by three sides.

TRIBUNE. An officer among the Romans, chosen from among the people to defend their rights.

TRICOCCÆ. One of Linnæus's natural orders of plants, comprehending such as have a three armed capsule, as the euphorbia, &c.

TRIDENT. A three forked instrument

TRIENNIAL. Every three years, as triennial parliaments.

TRIGGER. The catch of a gun lock, which when pulled disengages the cock and causes it to strike fire.

TRIGLYPH. A member of the Doric frieze.

TRIGONOMETRY The art of measuring the sides and angles of triangles. The business of this science is to find the angles where the sides are given; and the sides of their respective ratios when the angles are given.

TRILLION (in Arithmetic). A billion of billions

TRIM OF A SHIP. Her best posture, proportion of ballast, and hanging of her masts, &c. for sailing.

TRINITARIANS. Those who believe in the Trinity.

TRINITY. The doctrine of three persons in the Godhead, namely, the Father the Son, and the Holy Ghost.

TRIO (in Music). A piece for three voices.

TRIUMPHAL CROWN. A crown

among the Romans given to a victorious general; it was made at first of wreaths of laurel, and afterwards of gold.

TRIUMVIRATE. A form of government in which three persons bear rule, as the Roman triumvirate of Pompey, Cæsar and Crassus, and afterwards that of Augustus, Marc Antony, and Lepidus.

TRIPLE CROWN. The tiara, or papal crown.

TRIPLE TIME (in Music). A time consisting of three measures in a bar.

TRIPOD. The sacred seat, supported by three feet, on which the priestesses among the ancients used to deliver the oracles.

TRIPOLI. A mineral of an earthy texture, but for the most part found considerably indurated.

TRISECTION. The dividing a thing into three parts.

TRISYLLABLE. A word consisting of three syllables.

TRITON. A sea god.

TROCAR. An instrument used in tapping for the dropsy.

TROOP. A certain number of horse soldiers.

TROOPER. A horse soldier.

TROPICS (in Astronomy). Circles drawn at the distance of twenty-three and half degrees on each side the equator, that on the north side called the Tropic of Cancer, that on the south the Tropic of Capricorn.

TROPICS (in Geography). The regions on the earth which lie within the tropical circles.

TROUBADOURS. Ancient bards of Provence and Normandy.

TROVER. An action which a man has against any one who, having found his goods, or having them unjustly in his possession, refuses to deliver them up.

TROUGH. A hollow piece of wood, which serves to hold water or any other fluid.

TROUT. A fish of the salmon tribe.

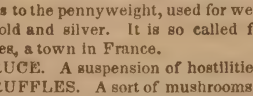
TROWEL. A bricklayer's tool for spreading mortar.

TROY WEIGHT. A weight of twelve ounces to the pound, twenty pennyweights to the ounce, and twenty-four grains to the pennyweight, used for weighing gold and silver. It is so called from Troyes, a town in France.

TRUCE. A suspension of hostilities.

TRUFFLES. A sort of mushrooms.

TRUMPET. The loudest of all wind instruments, consisting of a folded tube, generally of brass



TRUMPETER. The soldier who sounds the trumpet.

TRUMPETER-BIRD. A bird of South America, so called from its harsh cry, like a child's trumpet.

TRUSS (in Surgery) An elastic bandage worn in cases of hernia or ruptures

TRUSS (among Mariners). A machine for pulling a yard home to the mast.

TRUSS (in Commerce). A bundle of hay or straw, containing fifty-six pounds of hay and thirty-six pounds of straw.

TRUST (in Law). A right to receive the profits of land; and in equity to dispose of the land.

TRUSTEE (in Law). One who has an estate or money put into his hands for the use of another.

TUBE. Any pipe or canal which serves as a passage for air or any other fluid.

TUFAS. Beds of lime.

TULIP. A kind of plants which, for the diversity and beautiful arrangement of their colours have fetched extraordinarily high prices.

TUMBRIL. A dung cart.

TUMOUR. A preternatural or hard swelling.

TUN, or TON. A vessel for wine and other liquors; also a certain measure of capacity, containing 242 gallons; also a weight equal to 2240 pounds, whereby the burden of ships is estimated.

TUNIC. An under garment in use among the Romans.

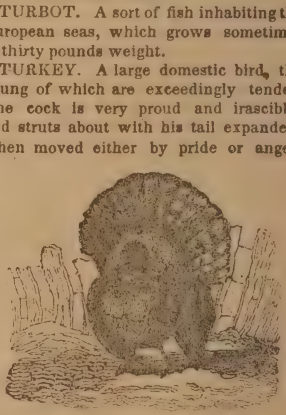
TUNING (in Music). Rectifying the false sounds of musical instruments.

TUNISTEN. An opaque mineral of a white colour and great weight, composed of lime and other earthy substances.

TUNNEL. A subterraneous passage cut through hills, mountains, and even in some cases under water.

TURBOT. A sort of fish inhabiting the European seas, which grows sometimes to thirty pounds weight.

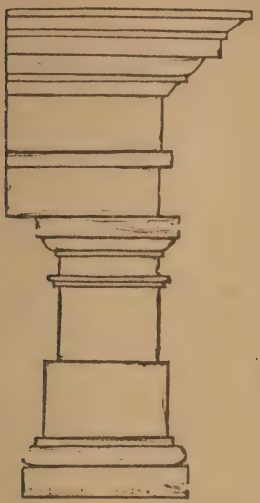
TURKEY. A large domestic bird, the young of which are exceedingly tender The cock is very proud and irascible, and struts about with his tail expanded, when moved either by pride or anger



This bird is found in a wild state, in the western country. The domestic turkey is the wild turkey tamed

TUMERIC. A drug procured from an Indian tree, the curcuma of Linnæus, which is used in dyeing.

TUSCAN ORDER. An order of architecture first used in Tuscany in Italy, which has but few ornaments or mouldings.



TUSKS. The great teeth that stand out in a boar's mouth.

TURNER. One who follows the art of turning. The company of turners in London, was incorporated in 1603.

TURNING. The art of forming wood, ivory, and other hard substances into a round or oval shape, by means of a machine called a lathe, and several instruments, as gouges, chisels, drills, formers, and screw tales, with which the turner works the thing into the desired form, as the lathe is turning.

TURNPIKE. A gate set across a road, through which all travellers passing either on horseback or in a conveyance, must pay toll; also the road which has such a gate.

TURNSPIT. A sort of dog that used to be taught to turn a spit before the introduction of smoke jacks.

TURPENTINE. A resinous substance procured from different species of the pine and fir. The best sort grows in North America. The method of obtaining it is by making a series of incisions in the bark of the tree, from which the turpentine exudes, and falls down into holes or other receptacles prepared to catch it.

TURTLE. A species of the tortoise that mostly inhabits the sea. Its flesh is held to be a great delicacy.

TURTLE DOVE. See Dove.

TUTTY A gray oxide of zinc.

TWELFTH DAY, or EPIPHANY The twelfth day after Christmas.

TWILIGHT. That period of light between darkness and the rising or setting of the sun.

TYMPAN. A frame belonging to a printing press.

TYMPANIUM. The drum or barrel of the ear, in which are lodged the bones of the ear.

TYPES. Pieces of metal cut or cast, which are employed in printing.

TYPHUS. A violently contagious fever, accompanied with a tendency in all the fluids to putrefaction.

TYPOGRAPHY. A description of all that relates to the use of types in the formation of books; a history of the art of printing.

## U

U, the twenty-first letter of the alphabet.

UBIQUITY. The property of being every where; the attribute of God.

UDDER. The milk bag of a cow or other four-footed beast.

ULCER. A purulent wound or running sore.

ULLAGE. A want of measure in a cask.

ULTIMATUM. The final conditions on which any party consents to treat for peace.

ULTRAMARINE. The finest sort of blue pigment prepared from lapis lazuli.

UMBEL. A sort of inflorescence like an umbrella.

UMBELLATÆ. One of the Linnæan natural orders, comprehending umbelliferous plants, or those which have flowers in the form of an umbel, as fennel, dill, &c.

UMBER. A dark yellow colour used in shading.

UMBRELLA. A kind of screen held over the head to keep off the sun and rain. It was introduced into England at the close of the last century.

UNA VOCE. With one voice, unanimously.

UNCTION. Anointing with consecrated oil, a practice among the Jews in consecrating kings and priests; also still in use at coronations, and in the Romish church on different occasions. The anointing of persons who are on their deathbed is called extreme unction.

UNCTUOUS. Oily, or like an ointment.

UNDECAGON. A figure having eleven sides.

UNDER SHERIFF. An assistant to the high sheriff.

UNDERTAKERS. Persons who conduct funerals.

UNDERTAKING (in Law). An engagement to do a particular thing.

UNDERWRITER. The person who undertakes to insure against losses at sea.

UNDULATION. The tremulous or vibratory motion in a liquid.

UNICORN. An animal said to have but one horn in the forehead.

UNIFORMITY. One form of public worship, as prescribed by different statutes to be observed in England.

UNION. The bringing of two countries under one form of government, as the Union of England and Scotland, and the Union of Great Britain and Ireland. In the United States the term is applied to the confederation of the several states under one general government.

UNISON. Unity of sound, mostly applied to that which proceeds from different voices.

UNIT. A figure expressing the number one.

UNITARIANS. Those who deny the divinity of our Saviour, and consequently the doctrine of the Trinity.

UNIVALVE. A shell consisting of one valve or piece.

UNIVERSITY. An institution established by public authority for the education of youth in the liberal arts, and conferring degrees in the several faculties. In England an university consists of several colleges under the government of a chancellor, vicechancellor, proctors, and beadles, besides the heads of the several houses, as in the universities of Cambridge and Oxford.

URANIUM. A newly discovered metal soft and brittle, but hardly fusible before the blowpipe; but with phosphate of soda and ammonia melts into a grass-green glass.

URETER. The membranous canal which conveys the urine from each kidney to the urinary bladder.

URETHRA. A membranous canal which serves as a passage for the discharge of the urine.

URN. A vessel among the Romans, in which they put the names of those who were to engage at the public games, taking them in the order in which they were drawn out. In such a vessel also they threw in the notes of their votes at the elections.

URSA. The name of two northern constellations, namely, Ursa Major and Ursa Minor, the Great and Little Bear.

URSUS. A genus of animals in the Linnæan system, including the bear, badger, racoon, glutton, &c.

USANCE. A determinate time fixed for the payment of a bill of exchange, reckoned either from the day of the bill's being accepted, or from the day of its date, and so called because it is regulated by the usage or custom of the place.

USHER (in Law). An officer who has the care and direction of the door of a court or hall.

USHER (in Schools). An assistant or lower master.

USHER OF THE BLACK ROD (in England). An officer whose business it is to bear the rod before the king at the feast of St. George and other solemnities.

USURY. The taking more interest for the loan of money than is allowed by law

## V

V, the twenty-second letter in the alphabet, stands as a numeral for 5, and formerly with a dash over it, thus $\bar{V}$, for 5000, as an abbreviation, V. G. Verbi gratia, V L. videlicet, &c.

VACANCY (in Law). A post or benefice wanting the regular officer or incumbent.

VACATION (in Law). The period between the end of one term and the beginning of another: and the same in the Universities.

VACCINATION. Inoculation with the cow pox, intended as a preservative against infection from the small pox.

VACUUM (in Philosophy). A space supposed to be devoid of all matter or body.

VADE MECUM. The name of any

small book that may be carried about with one.

VAGRANTS (in Law). Beggars, strolling and idle persons who wander from place to place.

VALET. Formerly a young gentleman of family, but now applied to a serving-man of low degree.

VALLAR CROWN. A crown bestowed among the Romans on a general who first entered an enemy's camp.

VALVE. A kind of lid or cover to a tube or vessel, contrived to open one way.

VALVES (in Conchology). The principal pieces of which a shell is composed; by their shells they are distinguished into univalves, for such as have only one piece; bivalves, for those that have two pieces; and multivalves, for those that have three or more pieces.

VALVE, Safety An orifice which allows the escape of steam when the pressure is so great as to endanger the apparatus.

VAMPIRE An animal of the bat tribe.

VAN (in the Army) The front of the army, or the first line.

VAN (in the Navy). The foremost division of a naval armament.

VANE. A device on the top of buildings to show the direction of the wind.

VAPOUR. A watery exhalation that, being rarefied by heat, ascends to a certain height in the atmosphere.

VASE. An ornamental urn

VASES (in Architecture). Ornaments placed on cornices, socles, or pediments, representing such vessels as the ancients used in sacrifices, &c.

VARIATION (in Geography and Navigation). A deviation of the magnetical needle in the mariner's compass.

VARIETY Any individual plant or animal that differs from the rest of the species in some accidental circumstances.

VARIORUM EDITIONS. Editions of the Greek and Latin authors, with the notes of different critics.

VARNISH. A thick, viscid, shining liquor, used by painters and other artificers to give a gloss to their works. Resin is the principal constituent of varnish.

VEGETABLE. An organic body destitute of sense and spontaneous motion, but furnished with pores and vessels, by the help of which it draws nourishment from other bodies.

VEGETABLE MARROW The fruit of a plant of the gourd kind growing in Persia. Its flesh is very tender, soft, and of a buttery quality.

VEIN (among Miners). A space containing ores, spar, clay, &c.: when it bears ore it is called a quick vein, when no ore a dead vein.

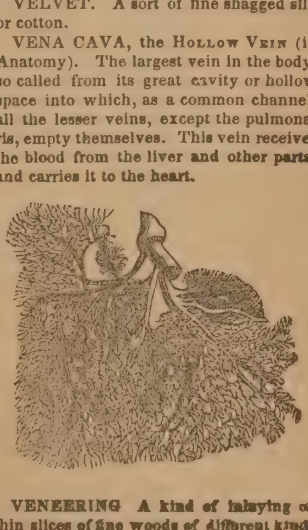
VEINS (in Anatomy). The long membraneous canals which return the blood from the arteries to the heart.

VELLUM. The finest kind of parchment.

VELOCITY. That affection of motion whereby a moveable body is disposed to run over a certain space in a certain time.

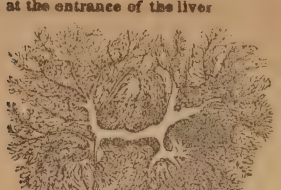
VELVET. A sort of fine shagged silk or cotton.

VENA CAVA, the Hollow Vein (in Anatomy). The largest vein in the body, so called from its great cavity or hollow space into which, as a common channel all the lesser veins, except the pulmonaris, empty themselves. This vein receives the blood from the liver and other parts, and carries it to the heart.



VENEERING A kind of inlaying of thin slices of fine woods of different kinds and colours

VENA PORTA. The great vein situated at the entrance of the liver



VENTILATOR A contrivance for supplying rooms with fresh air.

VENTRICLE. A cavity of the heart or brain.

VENTRILOQUIST. One who by art, or by a particular conformation of organs, is enabled in speaking to make the sound appear to come from the stomach, or from a distance.

VENUE (in Law). The neighbourhood whence juries are to be summoned for the trial of causes.

VENUS. The goddess of beauty, and daughter of Jupiter.

VEDAS. The ancient sacred literature of the Hindoos, or the Hindoo Scriptures; the four oldest sacred books of the Hindoos.

VELOCIPEDE. A sort of machine with two wheels, placed one before the other, and connected by a beam, on which a person sits astride; and the vehicle is propelled by the muscular power of the rider acting upon treadles and levers, which communicate with a cranked-wheel axle.

VENUS. In astronomy, a brilliant planet, the second in order of distance from the sun, and the most brilliant of all the planetary bodies. Her distance from the sun is about 68,000,000 miles.

VERMICULITE. A mineral which consists of micaceous-looking plates, composed of silica, magnesia, peroxide of iron, alumina, and water.

VEPRECULÆ. One of Linnæus's natural orders, containing briarlike plants, as the bramble, thorn, &c.

VERB. A part of speech which serves to express action, passion, or existence; it is either active, passive, or neuter.

VERBATIM. Word for word.

VERDEGRIS. An acetate of copper used as a pigment; it is the rust of brass gathered by laying plates of that metal in beds with the husks of pressed grapes, and then scraping it off the plates.

VERDICT The report or determination of a jury upon any cause.

VERDITER. A green paint

VERGE. In England, the compass of the king's court.

VERGER. In England, an officer of a court or a cathedral, who carries a rod before the judge or the bishop

VERJUICE. The expressed juice of the wild apple or crab

VERMES. Worms, a class of animals in the Linnæan system, that are slow of motion, of a soft substance, extremely tenacious of life, capable of reproducing parts that have been destroyed, and inhabiting moist places.

VERMICELLI. An Italian dish.

VERSE. A line in poetry, consisting of a number of long and short syllables; also the division of a chapter in the Bible

VERSIFICATION. The art and practice of making verses.

VERSION. A translation out of one language into another.

VERT. In England, every thing in a forest that bears a green leaf which may serve as a cover for deer

VERT (in Heraldry). The colour of green on coats of arms, represented in engraving by lines drawn from the dexter chief to the sinister base.

VERTEBRÆ. A chain of little bones reaching from the neck down to the back, and forming the spine.

VERTEX (in Geometry). The top of any line or figure, as the vertex of a triangle.

VERTEX (in Anatomy). The crown of the head.

VERTICAL. Pertaining to the vertex or zenith: a star is said to be vertical when it is in the zenith.

VERTICAL CIRCLE. A great circle of the sphere passing through the zenith and nadir, and cutting the horizon at right angles.

VERTICAL POINT (in Astronomy). That point in the heavens which is over our heads, otherwise called the zenith.

VERTICELLATÆ. One of the Linnæan natural orders of plants, including those whose flowers grow in the form of a whorl, as the mint, &c.

VERTIGO. Giddiness.

VERVAIN. A perennial, a sort of mallow

VESICLE. Any small vessels, either in the animal body or in plants.

VESPERS. The evening prayers in the Romish church.

VESPERTILIO. A genus of animals in the Linnæan system, comprehending the species of the bat and the vampire.

VESSEL. Any sort of utensil used for holding liquids.

VESSEL (among Mariners). Every kind of ship, large or small, that serves to carry men or goods on water.

VESSELS (in Anatomy). The conduits or canals for conveying the blood or other juices to the different parts of the animal body, as the arteries, veins, &c.

VESSELS (in Botany). The channels or reservoirs which convey the sap or air to different parts of plants for their nutriment.

VESTA (in the Heathen Mythology). The daughter of Rhea and Saturn, and the goddess of fire.

VESTA. A newly discovered planet.

VESTAL VIRGINS. Priestesses to the goddess Vesta among the Romans, to whom was committed the care of the vestal fire.

VESTIBULE. The entrance to a house, or an open space before a door.

VESTIBULUM. A cavity in the bone of the ear.

VESTRY. A small apartment adjoining a church, where the vestments of the clergyman are kept, and where the parishioners assemble for the discharge of parochial business; also the persons assembled in the vestry In England, a select vestry is a certain number of persons permanently appointed to conduct the affairs of the parish, who are chosen from among the higher orders, and fill up their own vacancies.

VESTRY CLERK. A scrivener who keeps the parish accounts.

VESTRYMEN. Members of the vestry who conduct the affairs of the parish.

VESUVIAN. A mineral found in lava, especially on Mount Vesuvius, which is often confounded with hyacinth; the primitive form of its crystal is a cube

VETCH. A kind of pulse or peas, bearing a papilionaceous flower.

VETERINARY ART, otherwise called FARRIERY The art of managing cattle, and curing their diseases, whence a veterinary surgeon, vulgarly called a horse doctor or farrier, and the veterinary college, where horses are taken in for cure, and persons resort to acquire practice and information in all that relates to the care of animals. The principal diseases to which horses are subject are the water farcy, or dropsy of the skin; ascites, or dropsy of the belly; broken wind, supposed to arise from a rupture of the cells in the lungs; cracks in the heels, from gross habit or from filth; farcy, an infection of the skin; foot-foundering, when a horse is unable to rest on any of his feet; greasy heels, from weakness or overheat; lampers, a swelling of the bars in the roof of the mouth; mange, an affection of the skin, when the hair falls off; staggers, a sort of lethargy, and mad staggers, a sort of frenzy from a pressure on the brain; strangles, a disease attended with a fever, cough, and running at the nose; thrush, a discharge from the frog of the foot; pole evil, arising from friction of the collar at the back of the ears; besides inflammations, fevers, dysenteries, and other disorders which they have in common with human subjects

VETURINO. A hirer of horses in Italy; also a guide to travellers.

V. G. Verbi gratia, as for instance

VIA LACTEA. The milky way.

VIBRATION. The alternate motion of any suspended body, like the pendulum of a clock, which swings this way and then that. The regular motion of the pendulum of a clock is 3600 vibrations in an hour Vibration is also a quivering motion that acts by quick returns.

VICAR (in England). One that acts in the stead of another; more particularly taken for the parson of a parish where the tithes are impropriated.

VICE (in Smithery). An instrument used for holding fast any piece of iron which the artificer is working upon.

VICE (among Glaziers). A machine for drawing lead into flat rods for case windows.

VICE. In the stead or turn; hence the compounds vice-gerent, vice-admiral, &c.

VICEADMIRAL. In England, the second commander in a fleet; the admiral who commands the second squadron in a fleet.

VICECHAMBERLAIN. In England, the officer next to the chamberlain, who acts in his stead.

VICECHANCELLOR. In England, an officer appointed to assist the Lord Chancellor; in the Universities, the superior acting officer, who performs the duties of the Chancellor.

VICEGERENT A governor acting with a delegated power

VICEROY. The lord lieutenant of a kingdom, as the Viceroy of Ireland.

VICE VERSA. On the contrary, the side being turned or changed.

VIDELICET, generally written Viz. That is, namely.

VI ET ARMIS (in Law). By force of arms, terms in an indictment charging a forcible and violent commission of trespass.

VIGIL. The service used in the Romish church on the night preceding a holyday.

VIGILS Certain fasts preceding festivals.

VIGNETTE. A frontispiece, or an ornamental picture preceding the title page.

VILLAINS (in England). Men of base and servile condition, who in the feudal times were immediately attached to the land, and bound to the lord to do services for him.

VINCULUM (in Algebra). A mark or line drawn over a quantity, thus, $\overline{a+b}$, denoting it to be one quantity

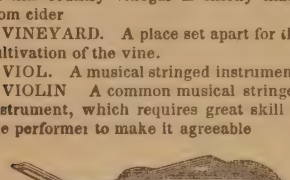
VINE. A plant that flourishes most in warm countries, as Italy, Spain, Portugal, and France, where its cultivation forms a part of husbandry It grows in those parts in the open fields, and is not suffered to rise much higher than gooseberry or currant bushes. The fruit of the vine is there an important article of trade.

VINEGAR. Wine or any other liquor exposed to the sun, until it is become acid. In this country vinegar is chiefly made from cider

VINEYARD. A place set apart for the cultivation of the vine.

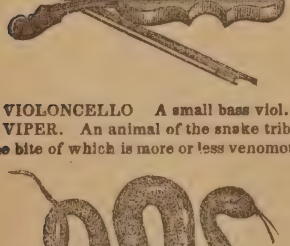
VIOL. A musical stringed instrument.

VIOLIN A common musical stringed instrument, which requires great skill in the performer to make it agreeable



VIOLONCELLO A small bass viol.

VIPER. An animal of the snake tribe, the bite of which is more or less venomous



every where; in hot countries it is almost instantly fatal

VIOLET A plant bearing a blue sweet scented flower; also the colour of the violet, or purple.

VIRGO. The sixth sign of the zodiac, marked thus ♍, and a constellation containing from 32 to 110 stars, according to different authors.

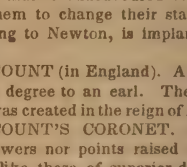
VIRTUOSO. One skilled in antique or natural curiosities; a lover of the liberal arts.

VISCERA. The intestines.

VIS INERTIÆ. The power in bodies that are in a state of rest, to resist any change that is endeavoured to be made upon them to change their state. This, according to Newton, is implanted in all matter.

VISCOUNT (in England). A nobleman next in degree to an earl. The first viscount was created in the reign of Henry VI

VISCOUNT'S CORONET. Has neither flowers nor points raised above the circle, like those of superior degree, but only pearls placed on the circle itself.



VISCUS. Any organ having an appropriate use in the human body, as the liver, gall, bladder, &c.; but particularly the intestines.

VISION. The sensation in the brain produced by the rays of light passing or acting on the optic nerves of the eye.

VISITATION (in England). An act of jurisdiction, whereby the bishop once in three years, and the archdeacon once every year, visits the churches within his diocess or district, to see that the discipline of the church is observed

VISITOR (in Law). An inspector into the government of a corporation.

VISUAL ANGLE An angle under which an object is seen.

VISUAL POINT. A point in the horizontal line wherein all the ocular rays unite.

VITAL AIR, now called Oxygen The air of which the atmosphere is principally composed, which is essential to the support of life in animals and plants.

VITAL FUNCTIONS. Those functions or faculties of the body, on which life immediately depends.

VIRTREOUS HUMOUR. The pellucid body which fills the whole bulb of the eye behind the crystalline lens.

VITRIOL. A salt, of a very caustic taste. It is a sulphate generally found in mines in a capillary state, or in a loose powdery efflorescence. The three principal sorts are the green vitriol, copperas, or sulphate of iron; the blue vitriol, or sulphate of copper; and the white vitriol, or sulphate of zinc.

VITRIOL, Oil of. Sulphuric acid.

VITUS' DANCE, or St. Vitus' Dance. A nervous disease accompanied with involuntary gesticulations.

VIVA VOCE By word of mouth.

VIVIPAROUS. An epithet for animals which bring forth living young.

VOCAL MUSIC. Musical sounds proceeding from the human voice; also compositions for the voice.

VOCATIVE CASE. The fifth case in Latin nouns.

VOLATILE. An epithet for bodies that are apt to evaporate

VOLATILE ALKALIES. Ammonia and carbonic acid

VOLATILIZATION. The process by which bodies are resolved into air.

VOLCANO. A burning mountain, such as Vesuvius, Ætna, and Hecla, in Europe; which send forth flame, ashes, lava, stones, smoke, &c.

VOLTAIC BATTERY. See Battery

VOLUME (in Music). The compass of a voice from grave to acute.

VOLUME (in Literature) A book, or any thing folded into the form of a book.

VOLUNTARY (in Music). An extemporary performance upon the organ, introduced as an incidental part of divine service.

VOLUTE. A spiral scroll in the Ionic and Composite capitals.

VOMICA. See Nux Vomica.

VOWEL. A letter which affords a complete sound of itself.

VOX POPULI. The popular or universal opinion.

VULGATE. A very ancient Latin translation of the Bible, which was translated from the Greek of the Septuagint. It is the only one acknowledged by the Romish church to be authentic.

VULCAN. The son of Jupiter and Juno and the god of fire. He is commonly represented with a hammer, anvil &c.

VULTURE. A bird common in all warm climates, that lives chiefly on putrid flesh, and is very useful in removing filth, that would otherwise produce disease

The turkey buzzard, common in the southern states, is a species of vulture so useful in clearing away offensive matter, as to be protected by law in large cities

## W.

W, the twenty-third letter of the alphabet, composed of two V's. It was not known to the Hebrews, Greeks, or Romans, being peculiar to the Teutones and other northern tribes

WACKE. An argillaceous earth

WADD Plumbago or black lead. Black wadd is an ore of manganese, found in Derbyshire in England.

WADDING. A stopple of paper or tow forced into a gun, to keep in the powder and shot.

WAFER. Paste made of flour, eggs isinglass, &c. cut into a thin round cake

and coloured, for the purpose of soaking otters.

WAFER (in the Romish Church). A thin piece of consecrated bread used at the holy rite of the sacrament.

WAGNERITE. A rare mineral resembling the Brazilian topaz.

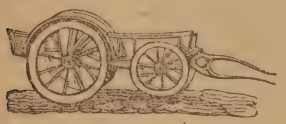
WALLERITE. A variety of orthoclase, found in small compact masses, yellowish and translucent.

WALL-PLATE. In architecture, a piece of timber lying on a wall, on which girders, joists, &c., rest.

WARWICKITE. A mineral containing titanium.

WAGES. Money paid for labour.

WAGGON. A large kind of four-wheeled conveyance, much used in husbandry.



WAGTAIL. A bird that is continually wagging its tail.

WAIFS (in England). Goods stolen, and afterwards waived or abandoned, which are forfeited to the king.

WAIST. That part of a ship between the quarterdeck and forecastle

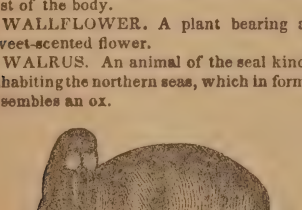
WAITERS (in Law). Officers appointed to see that goods are not landed clandestinely. Those who go on board the vessels are called tide-waiters; those who do this duty on shore are land-waiters.

WAITS. In England, nightly musicians, who go their rounds in the night-time and play just before Christmas.

WALKING LEAF. A singular insect of China, that has a neck longer than the rest of the body.

WALLFLOWER. A plant bearing a sweet-scented flower.

WALRUS. An animal of the seal kind inhabiting the northern seas, which in form resembles an ox.



WALTZ. A particular kind of dance, introduced into England from Germany It is mostly performed by the parties going with measured steps in circles.

WAPENTAKE. The same as a Hundred.

WARD (in Law). A district or portion of a city committed to the ward or special charge, of one of the aldermen; also one in the care of a guardian, or in particular cases in England, under the special care of the court of Chancery.

WARDEN (in England). One who has the charge or keeping of any person or thing by virtue of his office, as the warden of the Fleet, who has charge of the prisoners committed there; so likewise the warden of a college, or the warden of the Cinque Ports, &c.

WARDMOTE. The court of each ward in the city of London.

WARDROBE. A place for keeping clothes; also the clothes themselves.

WARDROBE, Clerk of the. In England, an officer who takes charge of the king's wardrobe.

WAREHOUSE. A place where merchandises are kept.

WARNING-WHEEL. The third or fourth wheel of a clock, according to its distance from the first wheel.

WARP. The thread extended lengthwise on the weaver's loom, which is crossed by the workman in forming the cloth, stuff or silk.

WARRANT (in Law). A writ commanding an officer of justice to take up any offender.

WARRANT OF ATTORNEY. An authority given to an attorney by his client to appear and plead for him.

WARRANT, Press (in the Navy) In England is issued by the admiralty, authorizing an officer to impress seamen.

WARRANTING (among Horsedealers) An assurance given by the seller to the buyer, that the horse sold, is free from all defects at the time of sale.

WARREN (in Law). In England, a franchise or privileged place for keeping beasts and fowls of the warren, as hares partridges, and pheasants.

WART. A spongy substance growing near the eye of a horse.

WASHES. A dangerous shore in Norfolk, England.

WASHING (among Goldsmiths). Drawing particles of silver and gold out of ashes

WASHING (among Painters). Colouring a pencil design with one colour, as Indian ink, &c

WASP. A stinging insect resembling a bee.

WASTE (in Law) A spoil or destruc-

fish made in houses, woods, and lands, by the tenant for life or years.

WASTE-BOOK A book containing an account of a merchant's transactions in the order of time as they occur.

WASTE-LANDS Such as are not in any man's occupation, that lie common.

WATCH (in the Navy). The space of time during which one division of the ship's crew remains on deck, to keep watch at night.

WATCH (in the Police). Persons appointed to guard the streets or particular places at night

WATCH. A small portable machine, constructed with wheels, that serves to show the hour of the day. A watch consists of a spiral steel spring, which is the moving power: the barrel, a brass box, for receiving the spring when coiled up; the worm-wheel, which is turned round by a worm; the fusee, which receives the chain when the watch is wound up; the ratchet wheel, at the lower end of the fusee; the great wheel, which has forty-eight teeth; the centre wheel, which has fifty-four teeth; the third wheel, which has forty-eight teeth; the centrate wheel, which has forty-eight teeth: and the balance wheel, which has fifteen teeth: besides the arbour of the balance wheel, called the verge, and the two pallets belonging to this arbour, &c.

WATCH-GLASS. Hour and half-hour glasses of sand, employed on board vessels to measure the period of the watch

WATCHMAKER One who puts together the different parts of a watch, so as to make the whole machine act.

WATER. A simple substance in the opinion of the ancients, and one of the five elements. It is now considered as a compound fluid consisting of two gases, hydrogen gas and oxygen gas.

WATER (among Lapidaries). The lustre of precious stones.

WATER (among Manufacturers). A lustre imitating waves, set on silks, mohair, &c.

WATER (among Farriers). A filthy humour issuing from a wound in a horse.

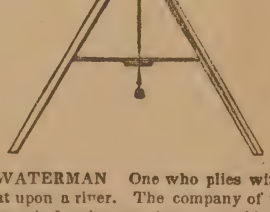
WATER-BAILIFF (in Law). An officer in seaport towns who searches ships, and in London has particular charge of the fish brought to market.

WATERCOLOURS. Colours made of water instead of oil. The principal of the water-colours are as follow: White—Ceruse, white lead, Spanish white, flake white, spodium: Black—Burnt cherry stones, ivory black, lamp black: Green—Green bice, green verditer, grass green, sap green, verdigrise distilled: Blue—Sanders blue, terre blue, blue verditer, indigo litmus, smalt, Prussian blue, light blue, ultramarine, blue bice: Brown—Spanish brown, Spanish liquorice, umber, bistre, terra de Sienna burnt and unburnt: Red—Native cinnabar, burnt ochre, Indian red, red lead, minium, lake, vermilion, carmine, red ink, Indian lake: Yellow—English ochre, gall stones, gamboge, masticot, ochre de luce, orpiment, Roman ochre, Dutch pink, saffron water, king's yellow, gold yellow, French berries.

WATER-COURSE. Any natural or artificial stream of water, as a river, a canal, and the like.

WATER HEN. An European bird that swims well, and runs swiftly on the land.

WATER-LEVEL. A kind of level used in agriculture for finding the level of roads or grounds by means of a surface of water or other fluid, founded on the principle that water always finds its own level. It consists of a long wooden trough, as represented underneath, which, being filled with water, shows the line of level.



WATERMAN One who plies with a boat upon a river. The company of watermen in London, was incorporated in the reign of Philip and Mary.

WATERMARK. The utmost limit of the rise of the flood.

WATERMARK. The mark visible in paper, which is made in the manufacturing of it.

WATER-SPOUT An aqueous meteor, most frequently observed at sea, rising at first in the form of a small cloud, which afterwards enlarges, and, assuming the shape of a cylinder or cone, emits them-

der, lightning, as also rain and hail, in such quantities as to inundate vessels, and overset trees, houses, and everything else which comes in its way.

WAHABEE. A follower of Abdel Wahab, a Mohammedan reformer, who flourished about A.D. 1760.

WALDENSES. A sect of Protestants residing in the valleys of Piedmont, established by Peter Waldo about A.D. 1180

WAMPUM. Small beads made of shells, used by the North Amer. Indians as money; the shells run on strings, and are used as belts or as ornaments.

WART-HOG. A name common to pachyderms of the genus Phacochœrus, family Suidæ, distinguished from the true swine by their dentition, which in some respects resembles that of the elephants. They feed on the roots of plants, which they dig up with their tusks. At least two species occur in South Africa.

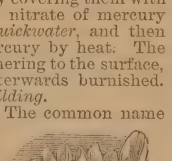
WASP. The common name applied to insects of various genera. Those best known belong to the genus Vespa. They are characterized by their geniculate antennæ, composed, in the males, of thirteen joints, the mandibles strong and dentated, and the clypeus large. The females and neuters are armed with an extremely powerful and venomous sting

WATER-BRIDGE. In *steamboilers*, a hollow partition at the back of a furnace communicating with the other water spaces, and forming part of the heating surface. Called also *water-table*.

WATER-GAS. An illuminating gas obtained by decomposing water. Steam is passed over red-hot coke, when the oxygen being absorbed the hydrogen and carbonic oxide are passed through a retort in which carbonaceous matter is undergoing decomposition, absorbing therefrom sufficient carbon to render it luminous when lighted.

WATER-GILDING. The gilding of metallic surfaces by covering them with a dilute solution of nitrate of mercury and gold, called *quickwater*, and then volatilizing the mercury by heat. The gold is thus left adhering to the surface, upon which it is afterwards burnished. Called also *Wash-gilding*.

WATER-LILY. The common name of aquatic plants of the genera Nymphæa and Nuphar, distinguished for their beautiful flowers and large floating leaves. The royal water-lily is the *Victoria regia*.



WATER-RABBIT. An Amer. variety of rabbit (*Lepus aquaticus*), remarkable for swimming and diving in water. It is found chiefly in Louisiana and Mississippi. Called also *Swamp-hare*.

WATERSHED. The range of high land in any district of country which forms the source of its various streams and rivers, shedding them off as it were from the roof of a house to their respective basins.

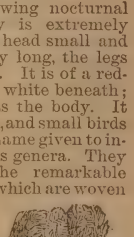
WATER-TUPELO. A large species of tupelo growing in swamps in the southern parts of the U. S., the fruit of which is sometimes used for a preserve.

WAXWING. The common name of the species of dentirostral birds of the genus Ampelis; so named because most of them have small, oval, horny appendages on the secondaries of the wings of the color of red sealing-wax. Only three species have been recorded, viz., the Bohemian waxwing or chatterer, a migratory bird, which has a wide geographical range; the American waxwing or cedar-bird, which is confined to North America; and the red-winged chatterer or Japanese waxwing, an Asiatic bird.

WAX-PALM. A species of palm found in South America. It grows to the hight of 180 feet. The trunk is marked by rings, caused by the falling off of the leaves, which are 18 to 20 feet long, and is covered with a thick secretion,—two-thirds resin and one-third wax.

WEASEL. A burrowing nocturnal quadruped. The body is extremely slender and arched, the head small and flattened, the neck very long, the legs short, and also the tail. It is of a reddish-brown color above, white beneath; tail of the same color as the body. It feeds on mice, rats, moles, and small birds

WEAVER-BIRD. A name given to insessorial birds of various genera. They are so called from the remarkable structure of their nests, which are woven in a wonderful manner of various vegetable substances. Some species build their nests separate and singly, and hang them from slender branches of trees and shrubs, but others build in companies, numerous nests suspended from the branches of a tree being under one roof, though each one forms a separate compartment and has a separate entrance. They are natives of the warmer parts of Asia, of Africa, and of Australia, none being found in Europe or America.



WEDGE. A tapered piece of metal or wood, used in splitting woods, rocks, &c., the wedge being one of the mechanical powers. In *geom.*, a solid of five sides, viz., a rectangular base, two rhomboidal sides meeting in an edge, and two triangular ends.

WEB-PRESS. A printing-machine which takes its paper from the web or roll,—much used in newspaper and such like printing.

WEEPING-WILLOW. A species of willow, the *Salix babylonica*, whose branches grow very long and slender, and hang down nearly in a perpendicular direction. It is a native of the Levant, and is said to have been first planted in England by the poet Pope.

WEEVER. An acanthopterygious fish of the genus Trachinus, included among the perches. About four species are well known, viz., the dragon-weever, sea-cat, or sting-bull, about 10 or 12 inches long, and the lesser weever, called also the adder-pike, or sting-fish, which attains a length of 5 inches. They inflict wounds with the spines of their first dorsal fin, which are much dreaded. Their flesh is esteemed.

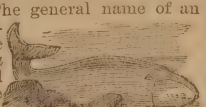
WEEVIL. A coleopterous insect, distinguished by the prolongation of the head, so as to form a sort of snout or proboscis. The wheat-weevil is a little dark red beetle of about ⅛ inch long, which deposits its eggs on wheat, and the larvæ burrow therein, each larva inhabiting a single grain, great quantities of which are thus destroyed.

Wheat-weevil (*Calandra granaria*).

*a*, Insect natural size. *b*, Insect magnified. *c*, Larva. *d*, Egg (both magnified).

WEND. One of a powerful Slavic people, now absorbed in the German race, which formerly inhabited the north and east of Germany. A remnant of them remains in the eastern district of Sachsen-Altenburg, and in the country between the Vistula and Persante, where they still speak the Wendic tongue and preserve their old manners and customs.

WHALE. The general name of an order of Mammalia, under the name of *Cetacea*. The Greenland whale is of the genus balæna, and when fully grown is from 50 to 70 feet in length, and from 30 to 40 feet in its greatest circumference.



WHALEBONE. An elastic horny substance which adheres in thin parallel plates to the upper jaw of the family of whales called Balænidæ. These plates or laminæ vary in size from a few inches to 12 feet in length; the breadth of the largest at the thick end, where they are attached to the jaw, is about a foot, and the average thickness is from four to five tenths of an inch. From its flexibility, strength, elasticity, and lightness, whalebone is employed for many purposes. Called also *Baleen*.

WHEATEAR. A small bird of the genus Saxicola, belonging to the dentirostral section of the order Insessores. It is also known by the names of *Fallowfinch*, *Whitetail*, &c.

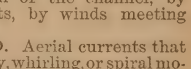
WHIMBREL. A grallatorial bird closely allied to the curlew, but considerably smaller in size. It is an inhabitant of most parts of Europe, and is also found in North Africa and in several parts of Asia. It is known also as the *Jack Curlew*, and *Half Curlew*.

WHINCHAT. A passerine bird of the genus Saxicola,—a European warbler. It is closely allied to the stonechat.

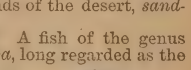
WHIRLPOOL. A circular eddy or current in a river or the sea produced by the configuration of the channel, by meeting currents, by winds meeting tides, &c.

WHIRLWIND. Aerial currents that assume a rotatory, whirling, or spiral motion, often of great and destructive violence, but of short duration,—their occurrence at sea produces *waterspouts*—on the loose sands of the desert, *sand-pillars*.

WHITEBAIT. A fish of the genus Clupea, the *C alba*, long regarded as the fry of the shad. It abounds in the Thames during spring and summer, and its flesh is much prized by the Londoners. The whitebait is a small fish attaining a length of 2 to 5 inches is pale silvery in color, with a greenish hue on the back.

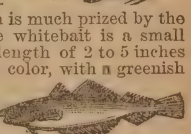


WHITING. A sea-fish, allied to the cod, and valued as an article of food.



WHITECOAT. A seal-fisher's name for the skin of a seal-calf, when such skins weigh only 60 to 70 lbs. to the dozen.

WIDGEON. A migratory fowl of the duck kind. They feed on aquatic plants, and on grass like the geese. The American widgeon is the *Marecca americana*, and is often called *bald-pate*, from the white on the top of the head.



WINGS. The right and left divisions of an army.

WINGS (in Fortification). The large projecting sides of hornwork.

WINNOWING. Separating corn from the chaff by the help of the wind.

WINDMILL. A mill that is put in motion by means of the wind acting on the sails, as in the subjoined figure.

WINTER. That season of the year when, in the northern hemisphere, the sun is in the tropic of Capricorn, or in his greatest declination from the equator.

WIRE. A piece of metal drawn out to the size of a thread, or even smaller, according to the size of the hole which it is made to pass through. One single grain of gold admits of being drawn out into a wire 98 yards long.

WITNESS (in Law) One sworn to give evidence in a cause

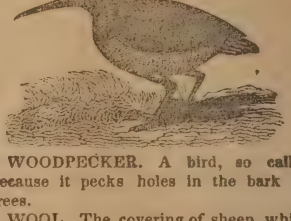
WOAD. A plant growing in France and on the coast of the Baltic, from which a blue dye of the same name is extracted. It is cultivated in the United States.

WOLF. A fierce animal of the dog tribe, found in almost all cold, and temperate climates. When pressed by hunger they become very bold and will attack men and

large animals They sometimes assemble together upon the mountains, and encircling the deer will rush upon them and drive them over the precipices, where they are killed and become the prey of the wolves.

WOOD ENGRAVER. An artist who cuts figures and letters in wood, to serve the purpose of engraving on copper This art has been carried to very great perfection, and in many respects will be found to effect the purpose quite as well as the sister art of copperplate engraving.

WOODCOCK. A wild fowl, and a bird of passage, which is esteemed for its flesh



WOODPECKER. A bird, so called because it pecks holes in the bark of trees.

WOOL. The covering of sheep, which is an important article of commerce in this country. Much attention, therefore, is paid to the breed, and also to the feeding of sheep, to render their wool as perfect as possible.

WOOLPACK. Literally, a pack of wool; a name for the seat of the Lord Chancellor in the House of Lords in England.

WOOLSTAPLER. One who deals in wool, and collects it for the manufacturer

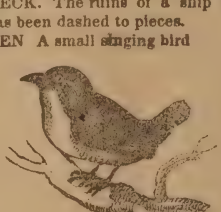
WORD. An articulate sound that represents some idea to the mind; in Military Affairs, a watchword, or peculiar word that serves as a token or mark for all sentinels to detect spies or other persons who may wish to intrude into a camp.

WORM. A long winding pewter pipe, placed in a tub of water to cool, and thicken the vapours in the distillation of liquors

WORM (in Gunnery). The instrument used for drawing the charge out of a gun.

WRECK. The ruins of a ship at sea that has been dashed to pieces.

WREN A small singing bird



WRIT (in Law). A precept issuing out of some court of law, commanding something to be done touching some suit.

# X

X begins no word truly English, but is chiefly used in words of Greek origin, and hence it is frequently applied to terms of a scientific character. —In arithmetical science, as a numeral, it stands for 10; when laid horizontally, ⋈, for 1,000; and, on account of its corresponding with the Greek digraph Ch, it is used as a contraction for Christ.

XANGTE. The name of the Supreme Being among the Chinese.

XANTHIAN. An epithet pertaining to Xanthus, the ancient capital of Lydia, as the *Xanthian marbles* in the British Museum.

XANTHIC. In chemistry, an epithet denoting an acid composed of sulphur, carbon, and oxygen.

XANTHIDIUM. A name given to minute organic bodies found in chalk and flint, supposed to be fossil Infusoria.

XANTHINE. In chemistry, the yellow dyeing matter contained in madder.

XANTHITE. A mineral of a light grey or yellow color. Its constituents are silica, alumina, lime, peroxide of iron, peroxide of manganese, and water: sp. gr. 3·20.

XANTHOGEN. In chemistry, the base of an acid, procured by the action and reaction of carburet of sulphur and potash.—*Xanthide* is a compound of xanthogen and a metal.

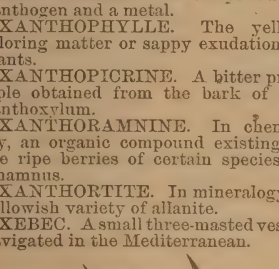
XANTHOPHYLLE. The yellow coloring matter or sappy exudation in plants.

XANTHOPICRINE. A bitter principle obtained from the bark of the xanthoxylum.

XANTHORAMNINE. In chemistry, an organic compound existing in the ripe berries of certain species of Rhamnus.

XANTHORTITE. In mineralogy, a yellowish variety of allanite.

XEBEC. A small three-masted vessel navigated in the Mediterranean.



XEROPHAGY. The eating of dry meats, a sort of fast among the primitive Christians.

XANTHOUS. In ethnology, a term applied to varieties of mankind with yellow, red, or brown hair.

XANTHOXYLACEÆ. In botany, a native order of exogenous plants, consisting of trees or shrubs, of which xanthoxylum, or prickly-ash, is the type and genus.

XENOTIME. An opaque crystal mineral; a phosphate of yttria.

XERASIA. In pathology, a disease of the hair.

XERODES. In pathology, something of a drying nature; a dry tumor.

XIPHIAS. In ichthyology, the sword-fish.—In astronomy, a comet like a sword.

XIPHOID. In anatomy, denoting a ligament or cartilage connected with the sternum, resembling a sword.

XIPHOSURA. In malacology, a family of Crustaceans with sword-shaped tails.

XYLIDINE. In chemistry, an artificial organic base or alkaloid, consisting of hydrogen, nitrogen, and carbon.

XYLO-. A prefix to numerous words connected with mechanical science and the arts, of which wood is the chief material.

XYLOBALSAMUM. The wood of the balsam tree; a balsam obtained by decoction of the leaves of the *Amyris Gileadensis*.

XYLOGRAPHY. The art of engraving on wood; wood-engraving.

XYLOCHLORE. An olive-green crystalline mineral, closely resembling apophyllite.

XYLOIDINE. In chemical science, a term applied to paper after it has been immersed in strong nitric acid, and washed in distilled water; the paper then assumes the toughness of parchment, and is so combustible as to serve for tinder.

XYLOLE. In chemistry, a hydrocarbon found among the oils separated from crude wood-spirit by the addition of water.

XYLOTILE. In mineralogy, an opaque green mineral, consisting of silver, iron, and magnesia.

XYLORETINE. In chemistry, a crystallizable compound found on the remains of pine trees.

XYLOPYROGRAPHY. The art or practice of engraving on charred wood.

XYPHIRRHYNCHUS. A family of fishes, of which the sword-fish is the type.

XYSTER. In surgery, an instrument for scraping and shaving bones.

## Y.

Y, the twenty-fifth letter of the English alphabet, is taken from the Greek *v*. At the beginning of words, it is called an *articulation* or *consonant*. In the middle and at the end of words, *y* is precisely the same as *i*. It is sounded as *i* long, when accented, as in *defy, rely;* and as *i* short, when unaccented, as in *vanity*. At the beginning of words, *y* answers to the German and Dutch *j*.

YAPON. In botany, the name of a South Sea Tea, the Cassine, the produce of the *Ilex cassine*, which is applied medicinally, and used as a tea. It is the produce of the southern states of South America.

YARRAWARA. In botany, a tree of New South Wales, one of the largest of the Eucalypti, which produces excellent timber.

YEAR. In chronolgy and natural philosophy, an important division of time, embracing the four seasons, and determined by the revolution of the earth in its orbit.—The *civil year* is the year of the calendar, *i.e.*, 12 months, or 365 days in common years, and 366 in leap years, beginning with the 1st of January.—The *sidereal year* is the space of time the sun takes in passing from any fixed star till his return to it again; the length of this is 365 days 6 hours 9′ 11″.—A *lunar year* is the space of twelve lunar months.—The *Julian year* consists of 365¼ days. Julius Cæsar ordered that the civil year should consist of 365 days for three successive years, and the fourth of 366 days.

YEAST. A substance generated during the vinous fermentation of vegetable juices and decoctions, rising to the surface in the form of froth.

YELLOW. The lightest and warmest of the prismatic colors, situated in the solar spectrum between red and blue.

YENITE. An opaque mineral of a black color, with a shade of brown or green, consisting of silica, lime, protoxide of iron, protoxide of manganese alumina, and water: sp. gr. 3·99.

YERBA. The native name for *mate'* or Paraguayan tea.

YEZIDEES. A small nation bordering on the Euphrates, whose religion is said to be a mixture of the worship of the devil, with some of the doctrines of the Magi, Mohammedans, and Christians.

Y-LEVEL. In surveying, an instrument for measuring altitude and distance.

YONI. The Hindu name for the female power in nature, represented by an oval.

YTTRIUM. A peculiar metal, discovered in the state of an oxide in Sweden; when heated to redness in the air, it takes fire, burns with splendor, and is converted into yttria.

YTTROCERITE. A mineral which occurs crystallized and massive, and whose constituents are fluoric acid, yttria, oxide of cerium, and lime: sp. gr. 3·44.

YTTROCOLUMBITE. The name of a mineral, of which there are three species—the yellow, brown, and black.

YTTROTANTALITE. A mineral containing yttria and oxide of columbium.

YU. In mineralogy, nephrite or jade.

YUG. In *Indian mythology*, one of the ages into which the Hindoos divide the duration or existence of the world.

YULAN. A beautiful flowering tree of China; the *magnolia yulan*.

YULE. A name given in many parts of England, and generally in Scotland, to the festival of Christmas; whence *yule-log*, a large log of wood placed on the fire during the Christmas merry meetings.

## Z.

ZAFFRE. In chemistry, the residuum or impure oxide of cobalt, after sulphur, arsenic, and other volatile matters have been expelled by calcination.

ZAMITE. In geology, a fossil zamina, which is a kind of palm.

ZAMTITE. A hydrous carbonate of nickel of an emerald-green color.

ZAPHARA. In the arts, a mineral used by potters to make a sky color.

ZARATHAN. In pathology, a hard tumor of the breast, resembling a cancer.

ZARNICH. A genus of fossils that burns with a whitish flame.

ZEA. A genus of important grasses, Indian corn or maize, extensively cultivated in warm countries as an article of food.

ZEBRA. A wild animal of Africa, somewhat resembling an ass, but larger, and beautifully striped.

ZEBRA-WOOD. The wood of a tree of Brazil and Rio Janeiro, of an orange and dark-brown color, variously mixed.

ZEBU. The Indian bull or cow, remarkable for its long pendulous ears, and a fatty excrescence or hump on its shoulders.

ZECHSTEIN. In mineralogy, a magnesian limestone lying under the red sandstone.

ZEND. The ancient Persian tongue —the language in which the Avesta is written.

ZEND-AVESTA. The sacred book or scriptures of the ancient Persian religion; properly the *Avesta* or sacred text, and the *Zend* or translation into a more intelligible language.

ZENITH. In natural philosophy and ouranology, that point in the visible celestial hemisphere which is vertical to the spectator; the point directly overhead, and opposite to the nadir.—*Zenith distance* is the distance of a star or planet from the zenith, measured on the vertical circle passing through the zenith.—*Zenith sector* is an astronomical instrument for measuring, with great accuracy, the distances from the zenith of stars which pass near that point.

ZEOLITE. In mineralogy, a family of minerals, consisting of silica, alumina, lime, and water; natrolite.

ZERO. In meteorology, the point at which the graduation of the thermometer commences.—The *zero* of Reaumur's and of the Centigrade thermometers is the freezing-point of water; that of Fahrenheit's thermometer, 32° below the freezing-point.

ZETETICS. A part of algebra which consists in the direct search after unknown quantities.

ZEUXITE. A greenish-brown mineral, consisting of silica, alumina, protoxide of iron, lime, and water: sp. gr. 3·0; H = 4·25.

ZIGZAG. An ornament in Gothic architecture; another name for the chevron.

ZIGZAGS. In fortification, trenches or paths with several indented windings, so cut that the besieger can not be enfiladed in his approaches.

ZIMOME. In chemistry, that part of the gluten of wheat which is insoluble in alcohol.

ZINC. A metal of a bluish-white color, brittle when cold, but malleable when heated; much used in the manufacture of brass and other alloys. It is found in solid masses, sometimes in six-sided prisms, having the ends terminated in pentagons.

ZINCOGRAPHY. The art of drawing upon, and printing from, plates of zinc.

ZINGIBERACEÆ. A nat. order of aromatic endogenous plants, of which zingiber is the type.

ZINKENITE. A crystallized mineral containing antimony, sulphur, lead, and copper: sp. gr. 5·30; H = 3—3·5.

ZIRCONIA. In mineralogy, a rare earth extracted from zircon and hyacinth.—*Zirconium* is the metallic base of zirconia.

ZOANTHORIA. In botany and zoology, a class of zoophytes; animal-flowers.

ZOANTHROPY. In pathology, a species of monomania, in which the patient believes himself transformed into one of the lower animals.

ZOARCHIDÆ. A family of the acanthopterygious fishes, of which zoarchus is the type and genus.

ZODIAC. In astronomy, an imaginary zone or belt in the heavens, extending about 8° or 9° on each side of the ecliptic. It is divided into twelve equal parts, called *signs*.—*Zodiacal light* is a faint nebulous brightness which accompanies the sun immediately before sunrise or after sunset.

ZOIATRIA. In pathology, the treatment of the diseases of the lower animals.

ZOISITE. A grey crystalline mineral, consisting of silica, alumina, lime, and protoxide of iron: sp. gr. 3·32; H = 6·25.

ZONE. In geology, a division of the earth's surface by means of parallel lines. The zones are five in number, viz., the *torrid zone*, two *temperate zones*, and two *frigid zones*.

ZONNAR. A belt or girdle, which the Christians and Jews in the Levant are obliged to wear, to distinguish them from the Mohammedans.

ZOO-. In natural history, a prefix to compound words relating to animals or animal life.

ZOOCHEMICAL. Pertaining to the chemistry of animal organization.

ZOOCHOMY. That science which pertains to animal chemistry.

ZOOGEMY. The doctrine of animal formation.

ZOOGRAPHY. In natural history, a description of animals.

ZOOLITE. In geology, the fossil remains of a petrified animal.

ZOONOMY. In natural history, a treatise on the laws of animal life; the structure and functions of animals.

ZOOPATHOLOGY. A treatise on the diseases of animals.

ZOOSPORE. In zoology, a moving spore, provided with cilia or vibratile organs.

ZURLITE. The name of a recently-discovered Vesuvian mineral.

ZYGOMA. In anatomy, a bone of the upper jaw; the process of the cheek bone.

ZYMIC. In chemistry, an epithet denoting an acid procured from a fermented substance, as leaven.

ZYMOSIS. In *med.*, a morbid action, as of the blood, supposed to be caused by fermentation.

**ZEBRA** An African animal of the horse tribe, about the size of a mule It is beautiful, swift, and wild.

**ZOOLOGY.** That branch of natural history which treats of animals. That which treats of quadrupeds is also called by the general name of zoology, to distinguish it from ornithology, which treats of birds; ichthyology, which treats of fishes; entomology, which treats of insects; helminthology, which treats of worms; erptology, which treats of creeping things.

General zoology comprehends the whole animal kingdom, as this class of natural objects is styled by Linnæus. It is divided into six classes; these classes are subdivided into orders, and the orders into genera, and the genera into species.

The first class, Mammalia, comprehends seven orders, namely, the primates, bruta, feræ, glires, pecora, belluinæ, and cete. Under the Primates are four genera, namely, homo, man; simia, the ape, baboon, and monkey; lemur, the lemur; vespertilio, the bat. Of the Bruta there are the following genera, namely, bradypus, the sloth; myrmecophaga, the ant-eater; dasypus, the armadillo; rhinoceros, the rhinoceros; sokotyro; elephas, the elephant; trichecnus, the morse and walrus, and the manis. The Feræ consist of ten genera, namely, phoca, the seal; canis, the dog, the wolf, the fox, and the hyæna; felis, the lion, tiger, leopard, tiger-cat, the lynx, and the cat; viverra, the weasel, the shank, the civet, the genet, and the fitchet; mustela, the otter, the marten, the ferret, the polecat, the ermine, and the stoat; ursus, the bear, the badger, the racoon, and the glutton; didelphis, the opossum, the marmose, the phalanger, and the kanguroo, talpa, the mole; sorex, the shrew; erinaceus, the hedgehog. The Glires consist of histrix, the porcupine; cavia, the cavy; castor, the beaver; mus, the rat, musk-rat, and the mouse; arctomys, the marmot; sciurus, the squirrel myoxus, the dormouse; dipus, the jerboa; lepus, the hare and the rabbit; and the hyrax. The Pecora consist of camelus, the camel and the llama· moschus, the musk; cervus, the stag, the deer, the moose or elk; camelopardalis, the camelopard or giraffe; antilopus, the antelope; capra, the goat; ovis, the sheep, and bos, the ox. The Belluinæ consist of equus, the horse, the ass, and the mule; hippopotamus, the river-horse; tapir, the tapir; and sus, the hog. The Cetæ consist of monodon, the monodon; balæna, the whale; physeter, the cachelot; delphinus, the porpoise, the dolphin, and the grampus.

The second class, Aves, is divided into six orders, namely accipitres, picæ, anseres, grallæ, gallinæ, and passeres. The Accipitres consist of four genera, namely, vultur, the vulture and the condur; falco, the eagle, the kite, the buzzard, the falcon, and the hawk; strix, the owl; lanius, the shrike, the butcher-bird, and the woodchat. The Picæ consist of the following genera, namely, ramphastos, the toucan; momotus, the motmot; psittacus, the parrot, the macaw, the parroquet the cockatoo, and the lory; buceros, the hornbill; crotophaga, the ani; glaucopis, the wattle-bird; corvus, the crow, the rook, the raven, the jackdaw, and the jay; coracoas, the roller; oriolus, the oriole; gracula, the grackle; paradisea, the bird of paradise; buceo, the barbet; trogon, the curucui; cuculus, the cuckoo; yurex, the wryneck; picus, the woodpecker; sitta, the nuthatch; todus, the toddy; alcedo, the kingfisher; galbula, the jacama; merops, the bee-eater; upupa, the hoopoe; certhia, the creeper; trochilus, the humming-bird; buphaga; and scythrops. The Anseres consist of anus, the swan, the goose, the duck, the shoveler, and the teal, mergus the merganser, the goosander, the dunn-diver, and the smew; alca, the auk or razorbill; apterodytes, the penguin; procellaria, the petrel, diomedea, the albatross or man-of-war bird, pelicanus, the pelican, the cormorant, the shag, the crane, the gennet, and the booby; plotus, the darter; phæton, the tropic bird; colymbus, the guillemot, the diver, and the grebe; larus, the gull, and the tarrock or kittiwake; sterna, the tern; rynchops, the skimmer. The Grallæ consist of the phoenicopteros the flamingo; platalea, the spoonbill; Lamedea, the screamer; mycteria, the jabira; cancroma, the boatbill; scopus, the umbre; ardea, the heron, the crane, the stork, and the bittern; tantalus, the ibis; corrira, the courier; scolopax, the curlew, the whintril, the snipe, the woodcock, the godwit, and the red-shank; tringa, the sandpiper. the phalarep, and the purre

charadrius, the plover and the dotterel; recurvirostra, the avocet; hæmatopus, the sea-pie or pied oyster, and the catcher; glarcola, the pratincole; fulica, the gallinule, the moorhen, and the coot; vaginalis, the sheath-bill; parra, the jacama; rallus, the rail, the crake or land-rail, the brook-ouzel or water-rail, and the soree; psophia, the trumpeter. The Gallinæ consist of the ollis, the bustard; struthio, the ostrich; and the cassowary or emeu; didus, the dodo; pavo, the peacock; meleagris, the turkey; penelope, the guam and the yacow; crux, the curassow; phasianus, the pheasant; numidia, the pintado or guinea-hen; tetrao, the grouse, the moorcock, the partridge, the quail, and the tinamon. The Passeres consist of columba, the pigeon, the ring-dove, the turtle-dove, &c.; alauda, the lark; sturnus, the stare or starling; and the crake or water-ouzel; turdus, the thrush, the fieldfare, the blackbird, and the ring-ouzel; ampelis, the chatterer; colius, the coly; loxia, the grossbeak; the crossbill, and the hawfinch; emberiza, the bunting; tanagra, the tanager; fringilla, the finch, the chaffinch, the siskin, the redpole, the linnet, the twite, and the sparrow; phytotoma, the phytotoma; muscicapa, the flycatcher; motacilla, the wagtail or warbler, the nightingale, the hedge-sparrow, the wren, the white-throat, the wheat-ear, and the red-start; pipra, the minnakin; parus, the titmouse; hirundo, the swallow and the swift; caprimulgus, the goatsucker.

Amphibia, the third class, is divided into two orders, namely, reptilia, reptiles; and serpentes, serpents. The Reptilia consist of the following genera, namely, testudo, the tortoise and the turtle; rana, the toad, the frog, and the natterjack; draco, the flying dragon; lacerta, the crocodile, the alligator, the lizard, the guana, the newt, the salamander, the chameleon, and the eft; syren, the syren. The Serpentes consist of crotelus, the rattle-snake; boa, the boa constrictor; coluber, the viper and the asp; anguis, the snake and the blind-worm; achrocordus, the warled snake; the amphisbœna; and cæcilia.

Pisces, the fourth class, is divided into six orders, namely, apodal, jugular, thoracic, abdominal, branchiostegous, chondropterigious. The Apodal order contains the following genera, namely, muræna, the eel; anarhicas, the wolf-fish; xiphias, the sword-fish; ammodytes, the launce; gymnotus, ophidium; stromateus; stylephorus, &c. The Jugular order contains the following genera, namely, callionymus, the dragonet; trachinus, the sting bull or weever; gadus, the cod-fish, bib, whiting, coal-fish, hake, barbot, and roskling; blennius, the blenny, &c. The Thoracic order contains the following genera; echineis, the sucking-fish; gobius, the goby; coltus, the bull-head, father-lasher, and miller's-thumb; zeus, the John-doree; pleuronectes, the flounder, plaice, dab, sole, smeardab, pearl, and turbot; sparus, the gilt-head and the pudding-fish; labrus, the wrasse, gold-finny, the camber, and the cook; perca, the perch, basse, luffe, black-fish, and squirrel-fish; scomber, the mackerel, thunny, scad, and yellow-tail; trigla, the gurnard, piper, tub-fish, &c. The Abdominal order contains the following genera, namely, cobitis, the loche and the mud-fish; salmo, the salmon, trout, salmon-trout, bull-trout, charr, smelt, gurniad, and lavaret; fistularia, the tobacco-pipe-fish; esox, the pike and gar-fish; mugel, the mullet; exocoetus, the flying-fish, clupea, the herring, pilchard, sprat, shad, and anchovy; cyprinus, the carp, barbel, gudgeon, tench, gold fish, dace, roach, bleak, bream, minnow graining, &c. The Branchiostegous orde contains the following genera: tetrodon the sun-fish; syngnathus, the pipe-fish and needle-fish; lophius, the fishing-frog, and angler or frog-fish, &c. The Chondropterigious order contains the following genera, namely, accipenser, the sturgeon; chimæra, the sea-monster; squalus, the shark, dog-fish, tope, sea-fox, and angel-fish; pristis, the saw-fish; raia, the ray, skate, thornback; petromyzon, the lamprey and the pride; gastrobranchus, the hag or hag-fish.

Insecta, the fifth class, is divided into seven orders, namely, coleoptera, hemiptera, lepidoptera, neuroptera, hymenoptera, diptera, and aptera. The order Coleoptera contains the following genera, namely, scarabæus, the beetle; dermestes the leather-eater; ptinus, the deathwatch forficula, the earwig; lampyris, the fire-fly; hydrophilus, the water-clock, &c. The order Hemiptera contains blatta, the cock-roach; gryllus, the locust, grasshopper, and cricket; fulgora, the lantern-fly; notonecta, the boat-fly; nepa, the water-scorpion; cimex, the bug; aphis, the plant-louse; coccus, the cochineal, &c. The order Lepidoptera contains papilio, the butterfly; sphinx, the hawk-moth; phalæna, the moth. The order Neuroptera contains libellula, the dragon-fly; ephemera, the day fly; myrmeleon, the lion-ant, &c. The order Hymenoptera contains cynips, the gall-fly; teuthredo, the saw-fly; sirex, the tailed wasp; ichneumon, the ichneumon chrysis, the golden fly, vespa, the wasp apis, the bee; formica the ant or emmet

&c. The order Diptera contains ostrus, the gad-fly and breeze; tipula, the crane-fly; musca, the fly; culex, the gnat; bombylius the humblebee, &c. The order Aptera contains podura, the spring-tail; termes, the white ant; pediculus, the louse and crab-louse; acarus, the tick, harvest-bug, and itch-mite; aranea, the spider; scorpio, the scorpion; cancer, the crab, lobster, prawn, shrimp, and squill; pulex, the flea, &c.

The sixth class, Vermes, is divided into five orders, namely, intestina, mollusca, testacea, zoophytes, and infusoria. The order Intestina contains the following genera, namely, fasciola, the gourd-worm or fluke; tænia, the tape-worm; godius, the hair-worm; lumbricus, the earth-worm, the dew-worm, and the lug; hirsudo, the leech; and sipunculus, the tube-worm, &c. The order Mollusca contains laplisia, the sea-hare; doris, the sea-lemon; actinia, the sea-daisy, sea-marigold, and sea-carnation; sepia, the cuttle-fish; asterias, the star-fish and sea-star, echinus, the sea-urchin, &c. The order Testacea contains lepas, the acorn-shell, arca, the ark; conus, the cone; turbo, the wreath; helix, the snail; haliotis, the sea ear; dentalium, the tooth-shell; ostrea, the oyster; cardium, the cockle; mytilus, the mussel; argonauta, the sailor; buccinum, the whelk, &c. The order Zoophytes contains spongia, the sponge; isis, the coral; hydra, the polype; tubipora; the tubipore, &c. The order Infusoria contains the genera voticella, monas volvox, gonium, &c.

## CUVIER'S ARRANGEMENT.

DIVISION I. VERTEBRATED ANIMALS, or those having a vertebral column or back bone.

DIVISION II. MOLLUSCA, animals of soft texture.

DIVISION III. ARTICULATED, or jointed animals.

DIVISION IV. ZOOPHITES, animal plants, or radiated animals.

DIVISION I. VERTEBRATED ANIMALS. Four classes.——*Class* I. *Mammalia*, animals which give suck. Order I, Bimana, or two-handed; man only. Order II, Quadrumana, or four-handed; monkeys of all kinds. Order III, Carnassiers, or flesh-eating. Subdivision I, Cheiroptear; winged-hands; as the bat. Subdivision II, Insectivora; living on insects; as the hedge-hog, shrew-mouse, and mole. Subdivision III. Carnivora; carnivorous. A. Plantigrade; which walk on the soles of the feet; as the bear, raccoon, badger, and glutton. B. Digitigrade; which walk on the toes; as (*a*) weasels. (*b*) The dog kind; domestic-dog, wolf, fox. (*c*) Civet-cat. (*d*) Hyena. (*e*) The cat kind; lion, tiger, leopard, panther, lynx, common cat. C. Some of the amphibious; as seals and walruses. D. Marsupial or pouched animals; as kangaroos and opossums. Order IV, Rongeurs, rodentia, or gnawers; as castors, beavers, rats, mice, marmots, squirrels, porcupines, hares, rabbits, guinea-pigs. Order V, Edentes, edentata, or toothless: as the sloth, armadillo, pangolin, ormithorynchus. Order VI, Pachydermata, or thick skinned; as the elephant, hippopotamus, pig, rhinoceros, horse, ass, zebra, quagga. Order VII, Ruminant; as the deer, antelope, goat, sheep, cow, buffalo. Order VIII, Cetacea, the whale-tribe.——*Class* II, *Birds*. Order I, Birds of prey. Subdivision I, Diurnal: as the vulture, eagle, falcon, hawk. Subdivision II, Nocturnal: as the owl. Order II, Passereaux, or the sparrow tribe: as the magpie, swallow, thrush, sparrow, crow, wren. Order III, Grimpeurs, or climbers: as the woodpecker, cuckoo, toucan, parrot. Order IV, Gallinacæ: the gallinaceous or poultry tribe: as the peacock, turkey, pheasant, barn-door fowl, partridge, pigeon. Order V, Echassiers, the stilted or waders: as the ostrich, cassowary, plover, crane, heron, stork. Order VI, Palmipedes, or web-footed: as the pelican, duck, swan, and goose.——*Class* III, *Reptiles*: Order I, Cheloniens, or tortoises. Order II, Sauriens, the lizard tribe: as the crocodile, lizard, gecko and chamæleon. Order III, Ophidiens, the serpent tribe: including the boa constrictor, and such serpents as are not venomous, as well as the venomous serpents. Order IV, Batriciens, the frog tribe: including frogs, toads, salamanders, the proteus, and syren.——*Class* IV. *Fishes*. Series I, Chondropterygiens, or the cartilaginous: as the lamprey, shark, skate, thornback, sturgeon. Series II, Asseux, the bony, whose divisions are principally taken from the gills, jaws, or fins, and are, Order I, the Plectognathes: as the sun-fish, trunk-fish. Order II, the Lophobranches: as the pipe-fish, and pegasus. Order III, the Malacopterygiens: as the salmon, herring, sein-fish, pike, carp, loche, silurus: cod, turbot, sole, remora, eel. Order IV, the Acanthopterygiens: as the perch, mackerel, dolphin.

DIVISION II, MOLLUSCA. Six Classes, principally constituted from the organs, and mode of progression.——*Class* I, *the Cephalopodes;* as the cuttle-fish and nautilus.——*Class* II, *the Pteropodes;* as the clio, cleodore, and hyalea. *Class* III, *the Gasteropodes;* as the slug, snail, and limpet. *Class* IV, *the Acephales*, (without heads); as the oyster and muscle.—— *Class* V, *the Brachiopodes;* as the lingula, and terebratula.——*Class* VI, *the Cirrhopodes;* as the barnacle.

DIVISION III, ARTICULATED ANIMALS. Four classes.——*Class* I, *Annelides*, or worms. Order I, the Tubicoles, forming a calcareous tube around them: as the scopula, sabella, and terebella. Order II. the Dorsibranches, the limbs diffused over the body; as the nereide and aphrodite. Order III, the Abranches, (without limbs); as the earth-worm and leech.——*Class* II, *the Crustaceous*. Five orders, formed from the number, or position of their organs of motion. Order I, the Decapodes: as the crab, lobster, and prawn. Order II, the Stomapodes: as the squill. Order III, the Amphipodes: as the gammarus. Order IV, the Isopdes: as the wood-louse. Order V, the Branchiopodes; as the monoculus.——*Class* III, *the Arachnides*, or spider tribe. Two orders, formed from respiration being effected by pulmonary cells: or by tracheæ, or openings in the skin. Order I, the Polmonaires; as the spider, tarantula and scorpion. Order II, the Tracheennes: as the phalangium, and mite.——*Class* IV, *Insects*. Twelve orders, derived principally from the number of their feet and wings. Order I, the Myriapodes, have numerous feet: as the julus, centipes. Order II, the Hysanoures, having appendages to their tails: as the lepisma, or wood-fish, and podura. Order III, the Parasites: as the louse. Order IV, the Succurs: as the flea. Order V, the Coleopteres, having cased wings: as the carabus, beetle, lady-bird, glow-worm. Order VI, the Orthopteres, having straight wings: as the earwig, locust, grasshopper, and mole cricket. Order VII, the Hemipteres, or half-winged: as the bug, the water scorpion, lantern-fly, aphis, and cochineal. Order VIII, the Neuroptores, having net-work wings: as the dragon-fly, and ephemera. Order IX, the Hymenopteres, having membranous wings: as the ichneumon, ant, sphex, wasp, and bee. Order X, the Lepidopteres, having scaly wings: as the butterfly, and moth. Order XI, the Rhipiptores having fan-like wings: as the xenos, and stylops Order XII, the Dipteres, having two wings: as the gnat, and house-fly.

DIVISION IV. ZOOPHITES. Four classes ——*Class* I, *the Ecaynodermes;* spinedskin; as the star-fish, and echinus.——*Class* II, *the Intestinaux*, or intestinal animals: as the tænia, ascaris, and hydatid.——*Class* III, *the Acalephes*, or sea-nettle as the sea-anemony, and medusa.——*Class* IV. *the Polypes*, or many-footed: as the hydra, corralina, and sponge.——*Class* V, *the Infusoires*, found in animal and vegetable infusions: as the wheel animal, and proteus.

**Weather-tide.** The tide which sets against the lee-side of a ship, impelling her to windward.
**Weigh.** To raise or lift so that it hangs in the air, as an anchor.
**Well.** An inclosure in the middle of a ship's hold, around the pumps, from the bottom to the lower deck, to preserve them from injury.
**Wheel.** A circular frame having handles on the periphery, and an axle on which are wound the tiller-ropes, connecting with the rudder.
**Wheel-house.** A small house on deck, which contains the steering-wheel.
**Wheel-rope.** A rope which connects the steering-wheel and the rudder.
**Windbound.** Prevented from sailing by a contrary wind.
**Windlass.** The machine in a merchant vessel used in weighing anchor.
**Windward.** The point from which the wind blows.

**Yacht** (pron. *Yot.*) A sea-going vessel, used for pleasure-trips, racing, &c.
**Yard.** A long, slender piece of timber, nearly cylindrical, suspended upon the mast, by which a sail is extended.
**Yard-arm.** Either half of a ship's yard, from the center or mast to the end.
**Yaw.** A movement of a vessel by which she temporarily alters her course.

---

## GEOGRAPHICAL VOCABULARY.

**Geography.** A description of the surface of the earth. [and animals.
**Natural, or Physical Geography,** treats of land, water, atmosphere, plants,
**Political Geography,** treats of the divisions of the earth made by man.
**Mathematical, or Astronomical Geography,** treats of the form, size, motion, and imaginary lines of the earth.
**Empire.** A country governed by an emperor.
**Kingdom.** A country governed by a king or queen.
**Republic.** A country governed by men chosen by the people.
**State.** A division of a country with a form of government peculiar to itself.
**County.** The largest division of a state.
**Town.** A division of a county.
**City.** A town invested with increased rights and privileges.
**Capital.** The seat of government.
**President.** The chief magistrate of a republic.
**Governor.** The chief officer of a State.
**Mayor.** The chief officer of a city.
**Metropolis.** The largest and chief city in a country.
**Seaport.** A harbor large enough for large vessels.
**Cardinal Points.** Fixed or chief points—north, east, south, and west.
**Map.** A drawing of the whole or a part of the earth's surface.
**Artificial Globe.** A ball representing the surface of the earth.
**Mariner's Compass.** A box with a needle which always points north.
**Earth.** A planet; a very large opaque body.
**Axis.** An imaginary line through the earth from north to south.
**Poles.** The ends of the earth's axis.
**Meridian Circles.** Circles round the earth passing through the poles.
**Meridian.** Half of a meridian circle.
**Longitude.** Distance east or west from any given meridian.
**Hemisphere.** Half a globe or sphere.
**Degree.** The 365th part of a circle.
**Minute.** In geography the 60th part of a degree, or one geographical mile.
**Equator.** A circle dividing the earth equally between the poles.
**Latitude.** Distances from the equator.
**Zone.** Belt or girdle.
**Frigid.** Frozen, or very cold.
**Torrid.** Violently hot.
**Temperate.** Between two extremes
**Arctic.** Northern.
**Antarctic.** Southern.

**Cancer.** One of the twelve signs of the zodiac.
**Capricorn.** One of the twelve signs of the zodiac.
**Zodiac.** A broad circle in the heavens, containing the twelve signs.
**Parallels.** Lines running in the same direction, and at all points equally [distant
**Continent.** The largest division of land on the earth.
**Island.** Land surrounded by water.
**Peninsula.** Land almost surrounded by water.
**Isthmus.** A strip of land joining a peninsula to the main land.
**Cape.** A point of land projecting into the water.
**Promontory.** A high point of land or cape projecting into the sea.
**Mountain.** A large mass of earth and rock elevated above the surrounding [country.
**Chain.** Mountains connected together.
**Volcano.** A burning mountain.
**Crater.** Opening in the top of a volcano.
**Hill.** An elevation less than a mountain.
**Valley.** Land between hills or mountains.
**Plain.** Flat, level country.
**Desert.** A barren tract of land.
**Shore, or Coast.** Land bordering on the sea.
**Ocean.** The largest body of water on the earth.
**Sea.** A branch of the ocean partly inclosed by land.
**Gulf, or Bay.** A portion of a large body of water extending into the land.
**Strait.** A narrow body of water connecting two larger bodies of water.
**Sound.** A strait which can be sounded by lead and line.
**Channel.** Similar to a strait.
**Lake.** A large body of fresh water, almost or wholly surrounded by land.
**River.** A stream of water flowing through the country in an open channel.
**Source.** The place where the river begins to flow.
**Mouth.** The place where a river discharges its waters into some other large body of water.
**Branch.** A river flowing into a larger river.
**Frith.** A narrow arm of the sea into which a river empties.
**Archipelago.** A sea interspersed with numerous isles.

---

## GEOMETRICAL DEFINITIONS.

**Angle.** An opening between two lines that meet in a point.
**Right Angle.** A straight line perpendicular to another.
**Obtuse Angle.** An angle wider than a right angle.
**Acute Angle.** An angle less than a right angle.
**Triangle.** A figure with three sides and three angles.
**Equilateral Triangle.** An angle having all sides equal.
**Isosceles Triangle.** An angle having two of its sides equal.
**Scalene Triangle.** An angle having all its sides unequal.
**Right-angled Triangle.** A triangle having one right angle.
**Obtuse-angled Triangle.** A triangle having one obtuse angle.
**Acute-angled Triangle.** A triangle having all its angles acute.
**Quadrangle, or Quadrilateral,** is a four-sided figure, and may be
**Parallelogram,** having its opposite sides parallel.
**Square,** having all its sides equal and all right angles.
**Rectangle,** having a right angle.
**Rhombus, or Lozenge,** having all its sides equal and no right angles
**Rhomboid,** a parallelogram with no right angles.
**Trapezium,** having unequal sides.
**Trapezoid,** having only two sides parallel.
**Polygon,** a plain figure having more than four sides.
**Pentagon,** having five sides.
**Hexagon,** having six sides.
**Heptagon,** having seven sides
**Octagon,** having eight sides
**Nonagon,** having nine sides
**Decagon,** having ten sides.

## DICTIONARY OF MUSICAL TERMS.

**A.** By; for.
**Accellerando.** Accelerating the movement.
**Accompaniment.** A part added to a principal one by way of enhancing the effect of the composition.
**Adagio.** A very slow degree of movement.
**Adagissimo.** Extremely slow.
**Ad libitum.** At will, or discretion. This expression implies that the time of some particular passage is left to the pleasure of the performer; or that he is at liberty to introduce whatever embellishments his fancy may suggest.
**Affettuoso.** Affectionate; tender.
**Agitato, or Con agitazione.** With agitation; anxiously.
**Al, All', or Alla.** To the; sometimes, in the style of.
**Allegremente.** With quickness.
**Allegretto.** Somewhat cheerful, but not so quick as *Allegro.*
**Allegretto scherzando.** Moderately playful and vivacious.
**Allegrezza.** Joy; as, **Con allegrezza,** joyfully, animatedly.
**Allegrissimo.** Extremely quick and lively.
**Allegro.** Quick; lively. A term implying a rapid and vivacious movement, but which is frequently modified by the addition of other words; as, **Allegro agitato,** quick, with anxiety and agitation, &c.
**Al segno,** or **Al seg,** signifies that the performer must return to a similar character in the course of the movement, and play from that place to the word *fine,* or the mark 𝄐 over a double bar.
**Andante,** implies a movement somewhat slow and sedate. This term is often modified, both as to time and style, by the addition of other words.
**Andantino.** Somewhat slower than **Andante.**
**Animato, Con anima,** or **Animoso.** With animation; in a spirited manner.
**A piacere,** or **A piacimento.** At the pleasure of the performer.
**Appoggiatûra.** A note of embellishment, generally written in a small character.
**Appoggiato.** Dwelt; leaned upon.
**Aria.** An air, or song.
**Arioso.** In the style of an air.
**Arpeggiando.** } Passages formed of the notes of chords which are taken
**Arpeggiato.** } in rapid succession, in imitation of the harp, are said to be
**Arpeggio.** } in *arpeggio.*
**Assai.** Very; extremely. This adverb is always joined to some other word, of which it extends the signification; as, **Adagio assai,** very slow; **Allegro assai,** very quick.
**A tempo, or A tem.** In a regular time.
**A tempo giusto.** In strict and equal time.
**Attacca, or Attacca subito.** A direction that the performer must directly commence the following movement.

**Ballad.** A short and familiar song.
**Barcarolle.** Airs sung by the Venetian gondoliers or boatmen.
**Beat.** One of the principal graces in music.
**Ben.** Well; as, **Ben marcato,** well marked. This expression indicates that the passage must be executed in a clear, distinct, and strongly accented manner.
**Bis.** Twice. A term which indicates that a certain passage, distinguished by a curve drawn over or under it, must be performed twice.
**Brillante.** An expression indicating a showy and sparkling style of performance.
**Brio, or Brioso.** With brilliancy and spirit.
**Brise.** Sprinkled; broken into arpeggios.

**Cadence.** A close in melody or harmony; an ornamental and extemporaneous passage introduced at the close of a song or piece of music.
**Cadence parfaite.** A perfect cadence.
**Cadence rompue.** An interrupted cadence.
**Cadenza.** A cadence, or close, at the termination of a song or other movement, introducing some fanciful and extemporaneous embellishment.
**Calando.** Gradually diminishing in tone and quickness.
**Calore.** With much warmth and animation.
**Canone.** A canon or catch for several voices or instruments.
**Canon.** A species of interrupted imitation.
**Cantabile.** In a graceful and singing style.
**Cantante.** A part to be executed by the voice.
**Capella, Alla.** In the church style.
**Capo.** The head, or beginning.
**Capriccio.** A fanciful and irregular species of composition.
**Catch.** A vocal piece in several parts, of a humorous character.
**Cavatina.** An air of one movement or part only, occasionally preceded by a recitative.
**Chant.** A song or melody; the vocal part.
**Che.** Than; as, **Poco piu che andante,** rather slower than *Andante.*
**Chromatic.** Proceeding by semitones, or formed by means of semitones.
**Coda.** A few bars added at the close of a composition, beyond its natural termination.
**Colla parte.** A direction that the accompanist must follow the principal part in regard to time.
**Con.** With; as, **Con espressione,** with expression; **Con brio,** with brilliancy and spirit.
**Concento.** Concord; agreement. A selection of pieces is sometimes so called.
**Concerto.** A composition intended to display the powers of some particular instrument, with orchestral accompaniments.
**Con dolcezza.** With sweetness.
**Con dolore.** Mournfully, with pathos.
**Con gravita.** With gravity.
**Con grazia.** With grace.
**Con gusto, or Gustoso.** With taste.
**Con impeto.** With impetuosity.
**Con moto.** In an agitated style; with spirit.
**Con spirito.** With quickness and spirit.
**Crescendo, or Cres.** With a gradually increasing quantity of tone.
**Da.** By.
**Da capo, or D. C.** From the beginning. An expression which is often written at the end of a movement to indicate that the performer must return to and finish with the first strain.
**Dal.** By; as, **Dal segno,** from the sign,—a mark of repetition.
**Decrescendo.** Gradually decreasing in quantity of tone.
**Delicatezza.** Delicacy; as, **Con delicatezza,** with delicacy of expression.
**Delicato.** Delicately.
**Diatonic.** Naturally; that is, according to the degrees of the major or minor scale, or by tones and semitones only.
**Diluendo.** A gradual dying away of the tone till it arrives at extinction.
**Diminuendo, or Dim,** implies that the quantity of tone must be gradually diminished.
**Di molto.** An expression which serves to augment the signification of the word to which it is added.
**Divertimento.** A short, light composition, written in a familiar and pleasing style.
**Dolce, or Dol.,** implies a soft and sweet style.
**Dolcezza, or Con dolcezza.** With sweetness and softness.
**Dolcemente.** In a sweet and graceful style.
**Doloroso.** In a soft and pathetic style.

**E, or Ed.** The Italian conjunction *and;* as, **Flauto e violino,** flute and violin; **Nobilimente ed animato,** with grandeur and spirit.
**Elegamente,** or **Elegante.** With elegance.
**Eleganza.** With elegance; gracefully.
**Energico, Con energia,** or **Energicamente.** With energy.
**Espressivo,** or **Con espressione.** With expression.
**Estravaganza.** Extravagant and wild, as to composition and performance.

**Facilita.** A facilitation; an easier adaptation.
**Fantaisie.** } A species of composition in which the author gives free
**Fantasia.** } scope to his ideas, without regard to those systematic forms which regulate other compositions.
**Finale.** The last piece of any act of an opera, or of a concert; or the last movement of a symphony or sonata, in the German style.
**Fine.** The end.
**Forte,** or **For,** or simply *f.* Loud.
**Fortissimo,** or *ff.* Very loud.
**Forzando,** or **Forz,** or *fz,* implies that the note is to be marked with peculiar emphasis or force.
**Fuoco, Con.** With intense animation.
**Furioso, or Con Furia.** With fire.

**Gaiement.** In a cheerful and lively style.
**Gallopade.** A galop; a quick German dance-tune.
**Galop,** or **Galoppe.** A quick species of dance, generally in 2-4 time.
**Giusto.** In just and exact time.
**Graces.** Occasional embellishments, sometimes indicated by the composer, sometimes spontaneously introduced by the performer. The most important of these are the *Appoggiatura,* the *Turn,* and the *Shake.*
**Grandioso.** In a grand and elevated style.
**Gran gusto.** In an elevated, grand style.
**Gravamente.** Dignified and solemn.
**Grave.** The slowest degree of movement; also, a deep, low pitch, in the scale of sounds.
**Gravita.** Gravity; as, **Con gravita,** with gravity.
**Gruppetto.** A group of notes; a turn.
**Gruppo.** A turn, or grace.
**Gusto, Gustoso, or Con gusto.** With taste; elegantly.

**Il.** The.
**Imitazione.** An imitation.
**Impetuoso.** With impetuosity; impetuously.
**Impromptu.** An extemporaneous production.
**Improvisare.** To compose or sing extemporaneously.
**In.** In; as, **In tempo,** in time.
**Innocente,** or **Innocentemente.** In an artless and simple style.
**Interlude.** An intermediate strain or movement.
**Intrada,** or **Introduzione.** A short introductory movement.
**Istesso.** The same; as, **Istesso tempo,** the same time.

**Larghetto** indicates a time slow and measured in its movement, but less so than *Largo.*
**Larghissimo.** Extremely slow.
**Largo.** A very slow and solemn degree of movement.
**Legato.** In a smooth and connected manner.
**Legatissimo.** Exceedingly smooth and connected.
**Legerement.** With lightness and gayety.
**Leggiardo.** Light; gentle.
**Leggieramente.** Lightly; gently.

**Leggiero, or Con leggierezza.** With lightness and facility of execution.
**Leggierissimo.** With the utmost lightness and facility.
**Lentando.** With increasing slowness.
**Lentemente, or Lento.** In slow time.
**Liaison.** Smoothness of connection; also, a bind or tie.
**Loco.** This word implies that a passage is to be played just as it is written in regard to pitch. It generally occurs after 8va *alta*, or 8va *bassa*.
**Ma.** But; as, Allegro ma non troppo, quick, but not too much so.
**Maestoso.** With majestic and dignified expression.
**Main.** The hand; as, Main droite, Main gauche, or M. D., M. G., the right or left hand in piano music.
**Marcato.** In a marked and emphatic style.
**Marcia.** A march.
**Marziale.** In a martial style.
**Melange.** A composition founded on several favorite airs; a medley.
**Meme.** The same; as, Meme movement, in the same tune.
**Mesto.** Mournfully; sadly; pathetically.
**Mestoso.** Sadly; pensively.
**Metronome.** An ingenious instrument for indicating the exact time of a musical piece by means of a pendulum, which may be shortened or lengthened at pleasure.
**Mezzo.** In a middling degree or manner; as, Mezzo forte, rather loud; Mezzo piano, rather soft.
**Mezzo carattere** implies a moderate degree of expression and execution.
**Moderato.** With a moderate degree of quickness.
**Molto.** Very; extremely; as, Molto allegro, very quick; Molto adagio, extremely slow.
**Morceau.** A piece, or musical composition of any kind.
**Mordente.** A beat, or transient shake.
**Morendo.** Gradually subsiding in regard to tone and time; dying away.
**Mosso.** Movement; as, Piu mosso, with more movement; quicker.
**Moto, or Con moto.** With agitation.
**Movimento.** Time; movement.

**Nobile, or Nobilemente.** With nobleness; grandeur.
**Notturno.** A composition, vocal or instrumental, suitable for evening recreation, from its elegance and lightness of character.

**O.** Or; as, Flauto o violino, flute or violin.
**Obligato, or Obligati.** A part or parts of a composition, indispensable to its just performance, and which, therefore, can not properly be omitted.
**Ottava, or 8va.** An octave. This word is generally joined with Alta, or Bassa. The first signifies that the passage to which it is applied must be played an octave higher than it is written; the second, that it must be played an octave lower.

**Passionate.** In an impassioned manner.
**Patetico.** Pathetically.
**Pathetique.** Pathetic.
**Pastorale.** A soft and rural movement.
**Pedale.** A pedal or stationary bass. In piano music this term implies that the performer must press down the pedal which takes off the dampers.
**Perdendo, Perdendose, or Perden.** Either of these terms implies a gradual diminution, both in quantity of tone and speed of movement.
**Peu.** A little.
**Phrase.** A short musical sentence containing an incomplete idea.
**Piacere.** Will; pleasure; as, A piacere, at the performer's pleasure in regard to time.
**Piano, or *p*.** Soft. **Pianissimo, or *pp*.** Extremely soft.

**Più.** An adverb of augmentation; as, **Più presto**, quicker; **Più piano**, [softer.
**Piantivo.** Expressively; plaintively.
**Plus.** More; as, **Plus anime**, with greater animation.
**Poco.** A little; rather; somewhat; as, **Poco presto**, rather quick; **Poco piano**, somewhat soft.
**Poco a poco.** By degrees; gradually; as, **Poco a poco crescendo**, louder and louder by degrees; **Poco a poco diminuendo**, softer and softer by degrees.
**Poi.** Then; as, **Piano poi forte**, soft, then loud.
**Polacca, Polonaise, Polonoise.** A slow, Polish dance, in 3-4 time, of a peculiar rhythmical construction, as the melodical members usually terminate on the third crotchet of the bar.
**Pomposo.** In a grand and pompous manner.
**Portamento.** The manner of sustaining and conducting the voice; a gliding from one note to another.
**Possibile.** Possible; as, **Più forte possibile**, as loud as possible.
**Potpourri.** A fantasia on favorite airs.
**Precipitato.** In a hurried manner.
**Precisione.** With precision; exactitude.
**Preludio.** A prelude or introduction.
**Premiere.** First; as, **Premiere fois**, first time.
**Prestissimo.** The most rapid degree of movement.
**Presto.** Very quick.
**Primo.** First; as, **Violino primo**, first violin; **Tempo primo**, in the first or original time.

**Quasi.** In the manner or style of; as, **Quasi allegretto**, like an *Allegretto*.
**Quieto.** With calmness or repose; quietly.

**Raddolcendo**, or **Raddolcente.** With augmented softness.
**Rallentando** implies a gradual diminution in the speed of the movement, and a corresponding decrease in the quantity of tone.
**Rapido.** Rapidly.
**Refrain.** A burden, or tag-end to a song. [emphasis.
**Rinforzando, Rinforzato, or Rinf., or Rf.** With additional tone and
**Romance.** A short, lyric tale. [words.
**Romanza.** Set to music: or a simple and elegant melody suitable to such
**Rondeau, or Rondo.** A composition of several strains or members, at the end of each of which the first part or subject is repeated.
**Ritenente, Ritenuto.** A keeping back; a decrease in the speed of the movement.

**Scherzando, Scherzante, Scherzoso, or Scherz.** In a light, playful, and sportive manner.
**Segno.** A sign; as, **Al segno**, return to the sign; **Dal segno**, repeat from the sign.
**Segue, or Seguito.** Now follows; or, as follows; as, **Segue il coro**, the chorus follows; **Segue la finale**, the finale now follows. It is also used in the sense of in similar or like manner, to show that a subsequent passage is to be played like that which precedes it.
**Semplice, or Semplicemente.** With simplicity; artlessly.
**Sempre.** Always; as, **Sempre staccato**, always staccato or detached; **Sempre forte**, always loud; **Sempre più forte**, continually increasing in force.
**Serioso.** In a serious style.
**Serpeggiando.** Gently and silently creeping onward; quietly advancing.
**Sforzato, Sforzando, or Sf.** implies that a particular note is to be played with emphasis.
**Siciliani.** A movement of a slow, soothing, pastoral character, in 6-8 time, resembling a dance peculiar to the peasantry of Sicily.
**Sinfonia.** A symphony or orchestral composition in many parts.

**Slentando.** A gradual diminution in the time or speed of the movement.
**Smorzando.** A gradual diminution as to tone.
**Soave.** In a soft, sweet, and delicate style.
**Soggetto.** The subject or theme.
**Soli,** plural of **Solo,** implies that two or more principal parts play or sing together. Such parts, of course, are never doubled.
**Solo, or Sola.** Alone.
**Solo.** A composition, or even a passage, for a single voice or instrument.
**Sonata, or Sonate.** A composition consisting of several movements, generally for a single principal instrument, with or without accompaniments.
**Sostenuto, or Sost.** Sustained; continuous in regard to tone.
**Spirito, or Con Spirito.** With spirit.
**Spiritoso.** With great spirit.
**Staccato,** implies that the notes are to be played distinct, and detached from one another.
**Stesso.** The same.
**Subito.** Quickly; as, **Volti subito,** turn quickly.
**Suite.** A series; a collection; as, **Une suite de pieces,** a series of lessons.
**Syncopate.** In a constrained and syncopated style.
**Syncopation.** The connecting the last note of one bar to the first note of the next, so as to form but one note of a duration equal to both. This displaces the accent, and produces a peculiar effect.

**Tacet,** implies that, during a movement, or part of a movement, some particular instrument is to be silent; as, **Flauto tacet,** the flute is not to play.
**Tanto, or Ton.** Not so much; not too much.
**Tardo.** Slowly; in a dragging manner.
**Tema.** A subject or theme.
**Tempestoso.** In a tempestuous manner.
**Tempo comodo.** In a convenient degree of movement.
**Tendrement.** Affectionately; tenderly.
**Teneramente, Tenero, or Con tenerezza.** Tenderly.
**Tenuto, or Ten,** implies that a note, or notes, must be sustained or kept down the full time.
**Theme.** A subject.
**Timoroso.** With timidity and awe.
**Tranquillo, Tranquillamente, or Con tranquilleza.** Tranquilly; composedly.
**Tremendo.** With a tremendous expression; horribly.
**Tremando, Tremolate, or Tremolo,** implies the reiteration of a note or chord with great rapidity, so as to produce a tremulous kind of motion.
**Trillando.** A succession of shakes on different notes.
**Trille, or Trillo.** A shake.
**Trio.** A piece for three voices or instruments. This term also denotes a second movement to a waltz, march, minuet, &c., which always leads back to a repetition of the first or principal movement.
**Triplet.** A group of three notes, arising from the division of a note into three equal parts of the next inferior duration.
**Tutta forza.** With the utmost vehemence; as loud as possible.
**Tutti.** A term used to point out those passages where all the voices or instruments, or both, are to be introduced.

**Un.** A; as, **Un poco,** a little.
**Veloce, or Con velocita.** In rapid time.
**Velocissimo.** With extreme rapidity.
**Vibrante.** A peculiar manner of touching the keys of the piano.
**Vigoroso, or Vigorosamente.** Boldly; vigorously.
**Vistamente, or Vite.** With quickness.
**Vivace, Vivamente, or Con vivatica.** With briskness and animation.
**Vivacissimo.** With extreme vivacity. **Vivatica.** **Vivacity.**
**Vivo, or Con vivezza.** Animated; lively. **Voce.** The voice.
**Volvante.** In a light and rapid manner.
**Volta.** Time of playing a movement; as, **Prim volta,** the first time of playing, &c.
**Volti subito.** Turn over quickly.

## CHRISTIAN NAMES OF MEN AND WOMEN,

WITH THEIR DERIVATION AND SIGNIFICATION.

### NAMES OF MEN.

**Aar'on** (Heb.) Very high; lofty.
**Ab'diel** (Heb.) The servant of God.
**A'bel** (Heb.) Breath; vanity.
**Abi'athar** (Heb.) Father of plenty.
**Abi'el** (Heb.) Father of strength.
**Abi'jah** (Heb.) Jehovah is a father.
**Ab'ner** (Heb.) Father of light.
**A'braham** (Heb) Father of a multitude
**A'bram** (Heb.) Father of elevation.
**Ab'salom** (Heb.) Father of peace.
**Ad'am** (Heb.) Man; earth-man.
**A'din** (Heb.) Tender; delicate; soft.
**Adol'phus** (Sax.) Successful helper.
**Adoni'ram** (Heb.) Lord of height.
**Al'an** (Slav.) A hound; harmony.
**Al'aric** (Sax.) All-rich; all-powerful.
**Al'bert** (Sax.) All-bright; illustrious.
**Alexan'der** (Gr.) A helper of men.
**Al'fred** (Sax.) All peace; protecting all
**Al'lan, Al'len** (Slav.) The same as ALAN. See ALAN.
**Alon'zo** (Ger.) The same as Alphonso.
**Al'pheus** (Heb.) Exchange.
**Alphon'so** (Ger.) All ready; willing.
**Al'vah** (Heb.) Iniquity.
**Al'van** (Heb.) Unrighteous.
**Al'vin, Al'win** (Sax.) Conquering all.
**Amari'ah** (Heb.) Jehovah promised.
**Am'asa** (Heb.) A burden.
**Am'brose** (Gr.) Immortal; divine.
**Am'mi** (Heb.) My people.
**A'mos** (Heb.) Strong; courageous.
**An'drew** (Gr.) Manly; courageous.
**Androni'cus** (Gr.) A conqueror of men.
**An'selm** (Ger.) An heroic defender.
**An'thony** (Lat.) Praiseworthy.
**Archela'us** (Gr.) Ruler of the people.
**Ar'chibald** (Ger.) Boldness.
**A'riel** (Heb.) Lion of God; valiant.
**Ar'nold** (Sax.) Strong as an eagle.
**Ar'temas** (Gr.) Gift of Artemis or Mi-
**Ar'thur** (Brit.) High; noble. [nerva.
**A'sa** (Heb.) Healer; physician.
**As'ahel** (Heb.) Made of God.
**A'saph** (Heb.) A collector.
**Ash'bel** (Heb.) Fire of Bel.
**Ash'er** (Heb.) Happy; fortunate.
**Ash'ur** (Heb.) Black; blackness.
**Augus'tus** (Lat.) Exalted; majestic.
**Augus'tine, Aus'tin** (Lat.) Belonging to Augustus.
**Bald'win** (Sax.) Bold; courageous.
**Barachi'as** (Heb.) Jehovah has blessed
**Bar'nabas, Bar'naby** (Heb.) Son of prophecy, or exhortation.
**Bartholomew** (Heb.) A warlike son
**Bas'il** (Gr.) Kingly; royal.
**Ben'edict** (Lat.) Blessed.
**Ben'jamin** (Heb.) Son of the right.
**Beno'ni** (Heb.) Son of my sorrow.
**Beri'ah** (Heb.) In calamity.
**Ber'nard** (Sax.) A brave man.
**Ber'tram** (Ger.) Bright raven.
**Bethu'el** (Heb.) Man of God.
**Bon'iface** (Lat.) A benefactor
**Bri'an** (Celt.) Strong.
**Cadwal'lader** (Brit.) Valiant in war.
**Cæ'sar** (Lat.) Hairy; or, blue-eyed.
**Ca'leb** (Heb.) A dog.
**Cal'vin** (Lat.) Bald.
**Ce'cil** (Lat.) Dim-sighted.
**Charles** (Sax.) Manly; noble-spirited.
**Chris'topher** (Gr.) Bearing Christ.
**Clar'ence** (Lat.) Illustrious.
**Clem'ent** (Lat.) Mild-tempered.
**Con'rad** (Sax.) Bold in counsel.
**Con'stantine** (Lat.) Resolute; firm.
**Corne'lius** (Lat.) Signification uncer-
**Cuth'bert** (Sax.) Renowned. [tain.
**Cy'rus** (Pers.) The sun.
**Dan'iel** (Heb.) A judge from God.
**Dari'us** (Pers.) Preserver.
**Da'vid** (Heb.) Beloved.
**Deme'trius** (Gr.) Belonging to Ceres.
**Den'is, Deu'nis** (Gr.) Belonging to Dionysos or Bacchus, god of wine.
**Dex'ter** (Lat.) The right hand.
**Dionys'ius** (Gr.) The same as DENIS.
**Don'ald** (Celt.) Proud chief.
**Dun'can** (Celt.) Brown chief.
**Eb'en** (Heb.) A stone.
**Ebene'zer** (Heb.) The stone of help.
**Ed'gar** (Sax.) Successful warrior.
**Ed'mund** (Sax.) Successful protector.
**Ed'ward** (Sax.) Guardian of property.
**Ed'win** (Sax.) Successful in war.
**Eg'bert** (Sax.) Bright eye.
**El'bert** (Sax.) All-bright; illustrious
**El'dred** (Sax.) Terrible.
**Elea'zer** (Heb.) Whom God helps.
**E'li** (Heb.) A foster son.
**Eli'ab** (Heb.) God is his father.
**Eli'as** (Heb.) Jehovah is my God.
**Eli'hu** (Heb.) God the Lord.
**Eli'jah** (Heb.) Strength of the Lord.
**Eli'sha** (Heb.) God my salvation.
**Eli'zur** (Heb.) God is my rock.
**Elnathan** (Heb.) God gave.
**Emman'uel** (Heb.) God with us.
**Ene'as** (Gr.) Praised: commended.

**E'noch** (Heb.) Initiated; instructed.
**E'nos** (Heb.) Man.
**E'phraim** (Heb.) Very fruitful.
**Eras'mus** (Gr.) Worthy to be loved.
**Eras'tus** (Gr.) Lovely; amiable.
**Er'nest** (Ger.) Earnest.
**E'sau** (Heb.) Covered with hair.
**E'than** (Heb.) Firmness; strength.
**Eugene'** (Gr.) Well-born; noble.
**Euse'bius** (Gr.) Religious; godly.
**Eus'tace** (Gr.) Standing firm.
**Ev'an** (Brit.) Gracious gift of God.
**Ev'erard** (Ger.) Fierce as a wild boar.
**Eze'kiel** (Heb.) Strength of God.
**Ez'ra** (Heb.) Help.
**Fe'lix** (Lat.) Happy; prosperous.
**Fer'dinand** (Ger.) Brave; valiant.
**Fernan'do** (Sp.) Same as Ferdinand.
**Fran'cis** (Fr.) Free.
**Frank** (Fr.) Contraction of Francis.
**Fred'erick** (Ger.) Peaceful ruler.
**Ga'briel** (Heb.) Man of God.
**Gama'liel** (Heb.) Recompense of God.
**Geof'frey** (Sax.) Good protector.
**George** (Gr.) A husbandman.
**Ger'ald** (Ger.) Strong with the spear.
**Gid'eon** (Heb.) A destroyer.
**Gil'bert** (Sax.) Bright as gold.
**Giles** (Gr.) A little goat.
**God'dard** (Ger.) Pious; virtuous.
**God'frey** (Sax.) Good protector.
**God'win** (Sax.) Good in war.
**Greg'ory** (Ger.) Watchful.
**Grif'fith** (Brit.) Having great faith.
**Gusta'vus** (Sw.) A warrior; hero.
**Guy** (Fr.) A leader.
**Han'nibal** (Punic.) A gracious lord.
**He'man** (Heb.) Faithful.
**Hen'ry** (Ger.) Rich lord.
**Her'bert** (Ger.) Glory of the army.
**Her'cules** (Gr.) Lordly fame.
**Her'man** (Ger.) A warrior.
**Hezeki'ah** (Heb.) Strength of God.
**Hil'ary** (Lat.) Cheerful; merry.
**Hi'ram** (Heb.) Most noble.
**Hor'ace** (Lat.) Signification uncertain
**Hora'tio** (Lat.) Significat'n uncertain
**Hose'a** (Heb.) Salvation.
**How'ell** (Brit.) Sound; whole.
**Hu'bert** (Sax.) Bright; handsome.
**Hugh** (Dutch.) High; lofty.
**Humph'rey** (Sax.) Protector of home.
**Ich'abod** (Heb.) Glory has departed.
**Igna'tius** (Gr.) Ardent; fiery.
**Imman'uel** (Heb.) God with us.
**In'gram** (Ger.) A stalwart youth.
**I'ra** (Heb.) Watchful.
**I'saac** (Heb.) Laughter.
**Isa'iah** (Heb.) Salvation of the Lord.
**Is'rael** (Heb.) A soldier of God.
**Ith'iel** (Heb.) God is with me.
**Ja'bez** (Heb.) He will cause pain
**Ja'cob** (Heb.) He will supplant.
**James** (Heb.) He will supplant.
**Ja'red** (Heb.) Descent.
**Ja'son** (Gr.) A healer.
**Jedidi'ah** (Heb) Beloved of the Lord.
**Jeffrey** (Sax.) At peace with God.
**Jeremi'ah** (Heb.) Exalted of the Lord.
**Jerome'** (Gr.) Having a holy name.
**Jes'se** (Heb.) Wealth.
**Jo'ab** (Heb.) Jehovah is his father
**Job** (Heb.) Afflicted; persecuted.
**Jo'el** (Heb.) The Lord is God.
**John** (Heb.) Gracious gift of God.
**Jo'nah** (Heb.) A dove.
**Jon'athan** (Heb.) Gift of Jehovah.
**Jo'seph** (Heb.) He shall add.
**Josh'ua** (Heb.) Lord of salvation.
**Jo'tham** (Heb.) The Lord is upright.
**Ju'dah** (Heb.) Praised.
**Ju'lian** (Lat.) Belonging to Julius.
**Ju'lius** (Gr.) Soft haired.
**Jus'tin** (Lat.) Just.
**Ken'elm** (Sax.) Defender of kindred.
**Ken'neth** (Gael.) Leader; commander
**La'ban** (Heb.) White.
**Lam'bert** (Sax.) A keeper of lambs.
**Lan'celot** (Ital.) A little angel.
**Law'rence** (Lat.) Crowned with laurel
**Lem'uel** (Heb.) Created by God.
**Leon'ard** (Sax.) Brave as a lion.
**Le'opold** (Ger.) Bold as a lion.
**Le'vi** (Heb.) Adhesion.
**Lew'is** (Fr.) Defender of the people.
**Li'nus** (Gr.) Flaxen-haired.
**Li'onel** (Lat.) A little lion.
**Loam'mi** (Heb.) Not my people.
**Loren'zo** (Ital.) Crowned with laurel.
**Lot** (Heb.) A veil; covering.
**Lu'bin** (Sax.) Beloved friend.
**Lu'cius** (Lat.) Born at break of day.
**Luke** (Lat.) A contract'n of Lucanus
**Lu'ther** (Ger.) Illustrious warrior.
**Lycur'gus** (Gr.) Wolf-driver.
**Mal'achi** (Heb.) Message of the Lord.
**Manas'seh** (Heb.) Forgetfulness.
**Marcel'lus** (Lat.) Dimin. of Marcus.
**Mar'cius** (Lat.) The same as Marcus.
**Mar'cus, Mark** (Lat.) A hammer.
**Mar'maduke** (Sax.) A mighty noble.
**Mar'tin** (Lat.) Martial; warlike.
**Mat'thew** (Heb.) Gift of Jehovah.
**Matthi'as** (Heb.) Gift of the Lord.
**Mau'rice** (Lat.) Sprung of a Moor.
**Mer'edith** (Celt.) Sea-protector.
**Mi'cah** (Heb.) Who is like the Lord?
**Mi'chael** (Heb.) Who is like God?
**Miles** (Lat.) A soldier.
**Mor'gan** (Brit.) Born on the sea.
**Mo'ses** (Egypt.) Drawn out of water
**Na'hum** (Heb.) Consolation.

**Na'than** (Heb.) A gift; given.
**Nathan'iel** (Heb.) The gift of God.
**Neal** (Lat.) Dark; swarthy.
**Nehemi'ah** (Heb.) Comfort of God.
**Nich'olas** (Gr.) Victory of the people.
**No'ah** (Heb.) Rest; comfort.
**No'el** (Heb.) Born on Christmas day.
**Nor'man** (Ger.) Native of Normandy.
**Obadi'ah** (Heb.) Servant of the Lord.
**O'bed** (Heb.) Serving God.
**Octa'vius** (Lat.) The eighth-born.
**Ol'iver** (Lat.) An olive-tree.
**Ores'tes** (Gr.) A mountaineer.
**Orlan'do** (Ital.) Counsel for the land.
**Os'car** (Celt.) Bounding warrior.
**Os'mund** (Ger.) Protection of God.
**Os'wald** (Ger.) Power of God.
**Ow'en** (Celt.) Young warrior.
**Ozi'as** (Heb.) Strength of the Lord.
**Pat'rick** (Lat.) Noble; a patrician.
**Paul** (Lat.) Small; little.
**Peleg** (Heb.) Division.
**Per'egrine** (Lat.) A stranger.
**Pe'ter** (Gr.) A rock.
**Philan'der** (Gr.) A lover of men.
**Phile'mon** (Gr.) Loving; friendly.
**Phil'ip** (Gr.) A lover of horses.
**Phin'eas** (Heb.) Mouth of brass.
**Pol'ycarp** (Gr.) Much fruit.
**Ptol'emy** (Gr.) Mighty in war.
**Quin'tin** (Lat.) The fifth.
**Ralph** (Sax.) Helpful in counsel.
**Raph'ael** (Heb.) The healing of God.
**Ray'mond** (Ger.) Strong protector.
**Reg'inald** (Sax.) Strong ruler.
**Reu'ben** (Heb.) Behold, a son.
**Reu'el** (Heb.) Friend of God.
**Reyn'old** (Sax.) Strong ruler.
**Rich'ard** (Sax.) Rich-hearted.
**Rob'ert** (Ger.) Bright in fame.
**Rod'erick** (Ger.) Rich in fame.
**Ro'dolph** (Sax.) Aiding in counsel.
**Rog'er** (Ger.) Famous with the spear.
**Ro'land**, **Row'land** (Ger.) Fame of the land.
**Ru'dolph** (Sax.) Famous hero.
**Ru'fus** (Lat.) Reddish; red-haired.
**Ru'pert** (Sax.) Bright in fame.
**Sam'son** (Heb.) Splendid sun.
**Sam'uel** (Heb.) Heard of God.
**Saul** (Heb.) Asked for.
**Se'ba** (Heb.) Eminent.
**Sebas'tian** (Gr.) Venerable; reverend.
**Seth** (Heb.) Appointed.
**Si'las** (Lat.) A contract'n of Silvanus.
**Silva'nus** (Lat.) Living in a wood.
**Silves'ter** (Lat.) Living in the woods.
**Sim'eon**, **Si'mon** (Heb.) Hearing with acceptance.
**Sol'omon** (Heb.) Peaceable.
**Ste'phen** (Gr.) A crown or garland.
**Sylva'nus** (Lat.) A lover of the woods.
**Sylves'ter** (Lat.) Living in the woods.
**Thad'deus** (Syr.) The wise.
**The'obald** (Sax.) Bold for the people.
**The'odore** (Gr.) The gift of God.
**Theoph'ilus** (Gr.) A lover of God.
**The'ron** (Gr.) A hunter.
**Thom'as** (Heb.) A twin.
**Tim'othy** (Gr.) One who honors God.
**Tobi'as** (Heb.) Pleasing to Jehovah.
**Tris'tram** (Lat.) Grave; pensive; sad.
**Ulys'ses** (Gr.) A hater.
**Ur'ban** (Lat.) Courteous; polished.
**Uri'ah** (Heb.) Light of the Lord.
**U'rian** (Dan.) A husbandman.
**U'riel** (Heb.) Light of God.
**Val'entine** (Lat.) Strong; powerful.
**Vic'tor** (Lat.) A conqueror.
**Vin'cent** (Lat.) Conquering.
**Viv'ian** (Lat.) Lively; living.
**Wal'ter** (Ger.) Ruling the host.
**Wil'liam** (Ger.) Resolute helmet.
**Win'fred** (Sax.) Win peace.
**Zab'diel** (Heb.) Gift of God.
**Zacche'us** (Heb.) Innocent; pure.
**Zachari'ah**, **Zach'ary** (Heb.) Remembered of the Lord.
**Zebadi'ah**, **Zeb'edee** (Heb.) Gift of the Lord.
**Zedeki'ah** (Heb.) Justice of the Lord.
**Zelo'tes** (Gr.) A zealot.
**Ze'nas** (Gr.) Gift of Jupiter.
**Zephani'ah** (Heb.) Hid of the Lord.

## NAMES OF WOMEN.

**Ab'igail** (Heb.) My father's joy.
**A'da** (Sax.) Happiness; rich gift.
**Ad'aline**, **Ad'eline** (Ger.) Of noble birth; a princess.
**Ad'ela** (Ger.) The same as Adaline.
**Ad'elaide** (Ger.) Same as Adaline.
**Ade'lia** (Ger.) The same as Adaline.
**Ag'atha** (Gr.) Good; kind.
**Ag'nes** (Gr.) Chaste; pure.
**Alber'ta** (Ger.) Feminine of Albert.
**Alethe'a** (Gr.) Truth.
**Al'ice** (Ger.) Noble birth; a princess.
**Almi'ra** (Ar.) Lofty; noble.
**Althe'a** (Gr.) A healer.
**Am'abel** (Lat.) Lovely; amiable.
**Aman'da** (Lat.) Worthy to be loved.
**Ame'lia** (Ger.) Busy; energetic.
**A'my** (Lat.) Beloved.
**Angeli'na** (Gr.) Angelic; lovely.
**Ann**, **An'na**, **Anne** (Heb.) Grace;—the same as Hannah.

**Annette'** (Heb.) French form of Anne.
**Antoinette'** (Gr.) Dimin. of Antonia.
**Anto'nia** (Lat.) Inestimable.
**Arabel'la** (Lat.) A fair altar.
**Augus'ta** (Lat.) Fem. of Augustus.
**Aure'lia** (Lat.) Fem. of Aurelius.
**Auro'ra** (Lat.) Morning; brightness.
**Azu'ba** (Heb.) Deserted.
**Bar'bara** (Gr.) Foreign; strange.
**Be'atrice** (Lat.) Making happy.
**Ber'tha** (Sax.) Bright; beautiful.
**Blanche** (Teut.) White; fair.
**Bridg'et** (Celt.) Strength.
**Camil'la** (Lat.) Attendant at sacrifice
**Car'oline** (Ger.) Fem. of Carolus.
**Cath'arine** / **Cath'erine** (Gr.) Pure.
**Cecil'ia** (Lat.) Feminine of Cecil.
**Ce'lia** (Lat.) Feminine of Cœlius.
**Celes'tine** (Lat.) Heavenly.
**Char'lotte** (Fr.) Feminine of Charles.
**Chlo'e** (Gr.) A green herb; blooming.
**Clar'a** (Lat.) Bright; illustrious.
**Claris'sa** (Lat.) A variation of Clara.
**Clementi'na** / **Clem'entine** (Lat.) Mild; gentle.
**Con'stance** (Lat.) Constant; firm.
**Co'ra** (Gr.) Maiden; daughter.
**Corde'lia** (Lat.) Warm-hearted.
**Corin'na** (Gr.) Maiden.
**Corne'lia** (Lat.) Fem. of Cornelius.
**Cyn'thia** (Gr.) Belonging to Cynthus.
**Deb'orah** (Heb.) A bee.
**De'lia** (Gr.) Belonging to Delos.
**Dian'a** (Lat.) Goddess.
**Dian'tha** (Gr.) Flower of Jove; a pink
**Di'nah** (Heb.) Judged.
**Do'ra** (Gr.) A gift.
**Dor'cas** (Gr.) A gazelle.
**Dorothe'a** / **Dor'othy** (Gr.) The gift of God.
**Drusil'la** (Gr.) Dewy eyes.
**E'dith** (Sax.) Happiness.
**Ed'na** (Heb.) Pleasure.
**El'eanor** (Sax.) All-fruitful.
**Eli'za** (Heb.) Contr'n of Elizabeth.
**Eliz'abeth** (Heb.) Worshiper of God.
**El'la** (Gr.) Contraction of Eleanor.
**El'len** (Gr.) Diminutive of Eleanor.
**El'sie** (Sax.) Diminutive of Alice.
**Em'eline** / **Em'meline** (Ger.) Energetic; industrious.
**Em'ily** (Lat.) The same as Emeline.
**Em'ma** (Ger.) The same as Emeline.
**Ernes'tine** (Ger.) Fem. dim. of Ernest.
**Es'ther** (Pers.) A star; good fortune.
**Eth'elind** / **Ethelin'da** (Sax.) Noble.
**Eudo'ra** (Gr.) Good gift.
**Euge'nia** (Gr.) Well-born; noble.
**Eu'nice** (Gr.) Happy victory.
**Euphe'mia** (Gr.) Of good report.
**E'va, Eve** (Heb.) Life.
**Evan'geline** (Gr.) Bringing glad news.
**Eveli'na** / **Ev'eline** (Heb.) Diminutive of Eva.
**Fan'ny** (Ger.) Diminutive of Frances.
**Felic'ia** (Lat.) Happy; happiness.
**Fide'lia** (Lat.) Faithful.
**Flo'ra** (Lat.) The goddess of flowers.
**Flor'ence** (Lat.) Blooming; flourishing
**Fran'ces** (Ger.) Feminine of Francis.
**Georgian'a** (Gr.) Fem. of George.
**Ger'trude** (Ger.) All truth.
**Grace** (Lat.) Grace; favor.
**Han'nah** (Heb.) The same as Anna.
**Har'riet** (Ger.) Fem. dim. of Henry.
**Hel'en** (Gr.) Light; alluring.
**Henriet'ta** (Ger.) Fem. dim. of Henry.
**Heph'zibah** (Heb.) My delight in her.
**Hes'ter** (Pers.) A star; good fortune.
**Hono'ra** (Lat.) Honorable.
**Hul'dah** (Heb.) A weasel.
**I'da** (Sax.) Happy; happiness.
**I'nez** (Gr.) Chaste; pure.
**Ire'ne** (Gr.) Peace; peaceful.
**Is'abel** / **Isabel'la** (Sp.) Worshiper of God.
**Jane** (Fr.) Feminine of John.
**Janet'** (Fr.) Diminutive of Jane.
**Jeannette'** (Fr.) Diminutive of Jane.
**Jemi'ma** (Heb.) A dove.
**Jeru'sha** (Heb.) Possessed; married.
**Joan'** / **Joan'na** (Lat.) Feminine of John.
**Jo'sephine** (Fr.) Feminine of Joseph.
**Ju'dith** (Heb.) Praised.
**Ju'lia** (Lat.) Feminine of Julius.
**Julian'a** (Lat.) Feminine of Julian.
**Ju'liet** (Fr.) Diminutive of Julia.
**Kath'arine** / **Kath'erine** (Gr.) Pure;—the same as Catharine.
**Ketu'rah** (Heb.) Incense.
**Kezi'ah** (Heb.) Cassia.
**Lau'ra** (Lat.) A laurel, or bay-tree.
**Lavin'ia** (Lat.) Of Latium.
**Leono'ra** (Gr.) The same as Eleanor.
**Leti'tia** (Lat.) Happiness.
**Lil'ian, Lil'ly** (Lat.) Lily.
**Lo'is** (Gr.) Good; desirable.
**Loui'sa** / **Louise'** (Fr.) Feminine of Louis.
**Lu'cia** (Lat.) Feminine of Lucius.
**Lucin'da** (Lat.) Shining; brilliant.
**Lucre'tia** (Lat.) Gain.
**Lu'cy** (Lat.) Feminine of Lucius.
**Lyd'ia** (Gr.) A native of Lydia, Asia.
**Ma'bel** (Lat.) Contraction of Amabel.
**Mad'eline** (Fr.) Same as Magdalene.
**Mag'dalene** (Heb.) Belong to Magdala
**Mar'cia** (Lat.) Feminine of Marcius.
**Mar'garet** (Gr.) A pearl.

**Mari'a** (Lat.) A form of Mary.
**Marianne'** (Fr.) From Mary and Anne.
**Mar'ion** (Fr.) A familiar form of Mary.
**Mar'tha** (Heb.) Sorrowful; melancholy
**Ma'ry** (Heb.) Bitter; star of the sea.
**Matil'da** (Ger.) A heroine.
**Maud** (Ger.) Contraction of Matilda.
**Mehet'abel** / **Mehit'able** (Heb.) Benefited of God.
**Mel'icent** (Lat.) A sweet singer.
**Melis'sa** (Gr.) A bee.
**Miran'da** (Lat.) Admirable.
**Mir'iam** (Heb.) The same as Mary.
**My'ra** (Gr.) She who weeps or laments
**Nan'cy** (Eng.) A familiar form of Anne
**No'ra** (Ital.) Contraction of Honora.
**Octa'via** (Lat.) Feminine of Octavius.
**Ol'ive** / **Oliv'ia** (Lat.) An olive.
**Olym'pia** (Gr.) Heavenly.
**Pauli'na** / **Pauline'** (Lat.) Fem. of Paulinus.
**Penel'ope** (Gr.) A weaver.
**Per'sis** (Gr.) A Persian woman.
**Phe'be** / **Phœ'be** (Gr.) Pure; radiant.
**Philip'pa** (Gr.) Feminine of Philip.
**Phil'lis** / **Phyl'lis** (Gr.) A green bough.
**Pol'ly** (Eng.) Variation of Molly, from
**Priscil'la** (Lat.) Somewhat old. [Mary
**Pru'dence** (Lat.) Foresight; prudence
**Ra'chel** (Heb.) A ewe.
**Rebec'ca** (Heb.) Of enchanting beauty.
**Rho'da** (Gr.) A rose.
**Ro'sa** (Lat.) A rose.
**Ros'abel** / **Rosabel'la** (Lat.) A fair rose.
**Ros'alie** (Fr.) Little blooming rose.
**Ros'alind** (Lat.) Beautiful as a rose.
**Ros'amond** (Ger.) Rosy lips.
**Roxan'na** (Pers.) Dawn of day.
**Ruth** (Heb.) Beauty.
**Sabi'na** (Lat.) A Sabine woman.
**Salome'** (Heb.) Peaceful.
**Sal'va** (Lat.) Safe.
**Sa'ra** / **Sa'rah** (Heb.) A princess.
**Seli'na** (Gr.) Parsley.
**Sere'na** (Lat.) Feminine of Serenus.
**Sib'yl** / **Sib'yl'la** (Gr.) A prophetess.
**Sophi'a** (Gr.) Wisdom.
**Sophro'nia** (Gr.) Of a sound mind.
**Stel'la** (Lat.) A star.
**Su'san** / **Susan'na** (Heb.) A lily.
**Tab'itha** (Syr.) A gazelle.
**Theodo'ra** (Gr.) The gift of God.
**Theodo'sia** (Gr.) The gift of God.
**There'sa** (Gr.) Carrying ears of corn.
**Typhe'na** (Gr.) Delicate; luxurious.
**Typho'sa** (Gr.) Luxurious; dainty.
**Ul'rica** (Ger.) Rich.
**Ura'nia** (Gr.) Heavenly.
**Ur'sula** (Lat.) A she-bear.
**Vale'ria** (Lat.) Feminine of Valerius.
**Victo'ria** (Lat.) Victory.
**Vi'da** (Erse.) Feminine of David.
**Vi'ola** / **Vi'olet** (Lat.) A violet.
**Virgin'ia** (Lat.) Virgin; pure.
**Viv'ian** (Lat.) Lively.
**Wilhelmi'na** (Sax.) Fem. of William.
**Win'ifred** (Sax.) A lover of peace.
**Zeno'bia** (Gr.) Life from Jupiter.

## ANCIENT GEOGRAPHICAL NAMES,

WITH THEIR CORRESPONDING MODERN NAMES.

| ANCIENT. | COUNTRIES OF EUROPE. | MODERN. |
|---|---|---|
| **Scandinavia** (skan-de-nā've-ah) | | Sweden and Norway. |
| **Chersonesus Cimbrica** (ker-so-nē'sus sim'bre-kah) | | Jutland, part of Denmark. |
| **Sarmatia** (sar-mā'she-ah) | | Poland, part of Russia. |
| **Britannia** (bre-tan'ne-ah), or **Albion** (al'be-un) | | Great Britain. |
| **Caledonia** (kal-e-dō'ne-ah) | | Scotland. |
| **Hibernia** (hi-ber'ne-ah) | | Ireland. |
| **Germania** (ger-mā'ne-ah) | | Germany, north of the Danube. |
| **Gallia** (gal'le-ah), or **Gaul** (gawl) | | France and the Netherlands. |
| **Helvetia** (hel-vē'she-ah) | | Switzerland. |
| **Hispania** (his-pā'ne-ah) | | Spain. |
| **Lusitania** (lu-se-tā'ne-ah) | | Portugal. |
| **Rhætia** (rē'she-ah) | | Tyrol, &c. |
| **Vindelicia** (vin-de-lish'e-ah) | | Part of Bavaria. |
| **Noricum** (nor'e-kum) | | Part of Bavaria and of Austria. |
| **Illyricum** (il-lir'e-kum) | | Part of Austria. |

| ANCIENT. | COUNTRIES OF EUROPE. | MODERN. |
|---|---|---|
| **Pannonia** (pan-nō′ne-ah) | | Part of Austria and of Hungary. |
| **Dacia** (dā′she-ah) | | Part of Hungary and of Turkey. |
| **Mœsia** (mē′ze-ah), **Thrace** (thrās), **Macedonia** (mas-e-dō′ne-ah), and **Epirus** (e-pī′rus) | | Part of Turkey. |
| **Grecia** (grē′she-ah), **Greece** (grēs) | | Greece and part of Turkey. |
| **Peloponnesus** (pel-o-pon-nē′sus) | | The Morea. |

COUNTRIES OF ASIA.

| | |
|---|---|
| **Asia Minor** (ā′she-ah mī′nor) | Natolia, Caramania, &c. |
| **Syria** (sir′e-ah), **Phœnicia** (fe-nish′e-ah), **Judea** (ju-dē′ah) | Part of Turkey. |
| **Armenia** (ar-mē′ne-ah), **Mesopotamia** (mes-o-po-tā′me-ah) | Part of Turkey. |
| **Assyria** (as-sir′e-ah), **Babylonia** (bab-e-lō′ne-ah) | Part of Turkey. |
| **Colchis** (kol′kis) **Iberia** (i-bē′re-ah), and **Albania** (al-bā′ne-ah), Georgia, Mingrelia, and part of Circassia. | |
| **Arabia** (a-rā′be-ah) | Arabia. |
| **Persia** (per′se-ah), **Media** (mē′de-ah), **Parthia** (par′the-ah) | Persia. |
| **Bactria** (bak′tre-ah) | Afghanistan. |
| **Scythia** (sith′e-ah) | Siberia and Tartary. |

COUNTRIES OF AFRICA.

| | | | |
|---|---|---|---|
| **Ægypt** (ē′gipt) | Egypt. | **Mauritania**(maw-re-tā′ne-ah) | Algiers, Morocco, &c. |
| **Libya** (lib′ye-ah) | Barca. | | [yssinia, &c. |
| **Africa** (af′re-kah) | Tripoli, Tunis. | **Æthiopia** (ē-the-ō′pe-ah), | Nubia, Ab- |
| **Numidia**(nu-mid′e-ah) | Tunis, Algiers. | **Gætulia** (je-tū′le-ah) | Biledulgerid. |

## SEAS, GULFS, STRAITS, AND LAKES.

| | |
|---|---|
| **Adriatic** (ā-dre-at′ik) **Sea** | Gulf of Venice. |
| **Ægæan** (e-gē′an) **Sea** | Archipelago. |
| **Aquitanian** (ak-we-tā′ne-an) **Ocean** | Bay of Biscay. |
| **Arabian** (a-rā′be-an) **Gulf** | Red Sea. |
| **Argolic** (ar-gol′ik) **Gulf** | Gulf of Napoli. |
| **Asphaltites** (as-fal-tī′tēz) **Lake** | Dead Sea. |
| **Atlantic** (at-lan′tik) **Ocean** | Atlantic. |
| **Benacus** (be-nā′kus) **Lake** | Garda. |
| **Bosphorus** (bos′fo-rus) (Cimmerian—sim-mē′re-an) | Strait of Caffa. |
| **Bosphorus** (bos′fo-rus) (Thracian—thrā′shan) | Strait of Constantinople. |
| **Brigantinus** (brig-an-tī′nus) **Lake** | Constance. |
| **Caspian** (kas′pe-an) **Sea** | Caspian. |
| **Codanian** (ko-dā′ne-an) **Gulf** | Baltic Sea. |
| **Corinth** (kor′inth), **Gulf of** | Gulf of Lepanto. |
| **Eux′ine** (yūks′in) **Sea** | Black Sea. |
| **Galilee** (gal′i-lē), **Sea of** | Tabaria. |
| **Gallic** (gal′lik) **Strait** | Strait of Dover. |
| **Gallic** (gal′lik) **Gulf** | Gulf of Lyons. |
| **Gangetic** (gan-jet′ik) **Gulf** | Bay of Bengal. |
| **Gennesareth** (jen-nes′a-reth) **Lake of** | Tabaria. |
| **Hellespont** (hel′les-pont) | Dardanelles. |
| **Hercules** (her′ku-lēz), **Strait of** | Strait of Gibraltar. |
| **Hibernian** (hi-ber′ne-an) **Strait** | Irish Sea. |
| **Ionian** (ī-ō′ne-an) **Sea** | Part of Gulf of Venice. |
| **Larius** (lā′re-us) **Lake** | Como. |
| **Ligustic** (le-gus′tik) **Gulf** | Gulf of Genoa. |
| **Leman** (lē′man) **Lake** | Geneva. |
| **Mediterranean** (med-i-ter-rā′ne-an) | Mediterranean. |
| **Palus Mœotis** (pā′lus me-ō′tis) | Sea of Azof. |
| **Propontis** (pro-pon′tis) | Marmora. |
| **Saronic** (sa-ron′ik gulf) | Gulf of Engia. |
| **Sicilian** (se-sil′yan) **Strait** | Strait of Messina. |
| **Syrtis** (sir′tis) **Major** | Gulf of Sidra. |
| **Thermaic** (ther-mā′ik) **Gulf** | Gulf of Contessa. |
| **Tiberias** (ti-bē′re-as), **Sea of** | Tabaria. |
| **Verbanus** (ver-bā′nus) **Lake** | Maggiore. |

## ISLANDS.

| ANCIENT. | MODERN. | ANCIENT. | MODERN. |
|---|---|---|---|
| Ægina (ē-jī'nah) | Engia. | Lemnos (lem'nos) | Stalimene. |
| Æolian (ē-ō'le-an) Isl'ds, | Lipari Isl'ds. | Lesbos (les'bos) | Metelin. |
| Amorgos (a-mor'gos) | Amorgo. | Leucadia (lu-kā'de-ah) | St. Maura. |
| Anaphe (an'a-fe) | Namphio. | Lipare (lip'a-re) | Lipari. |
| Andros (an'dros) | Andro. | Melite (mel'i-te) | Malta. |
| Aradus (ar'a-dus) | Larek. | Melite (mel'i-te) | Meleda. |
| Baleares (bal-e-ā'rēz), | Majorca, Minorca, and Ivica. | Melos (mē'los) | Milo. |
| Calymna (ka-lim'nah) | Calmina. | Mona (mō'nah) | Anglesea. |
| Capracia (ka-prā're-ah) | Gomera. | Monabia (mo-nā'be-ah) | Man. |
| Capreæ (kā'pre-ē) | Capri. | Myconus (mic'o-nus) | Myconi. |
| Carpathus (kar'pa-thus) | Scarpanto. | Nax'os (naks'os) | Naxia. |
| Cephalenia (sef-a-lē'ne-ah) | Cefalonia. | Nisyros (ni-sī'ros) | Nisiri. |
| Ceos (sē'os) | Zia. | Olearos (o-l'-'a-ros) | Antiparos. |
| Chios (kī'os) | Scio. | Paros (pā'ros) | Paros. |
| Cimolus (si-mō'lus) | Argentiera. | Patmos (pat'mos) | Patino. |
| Corcyra (kor-sī'rah) | Corfu. | Psyra (sī'rah) | Ipsara. |
| Corsica (kor'se-kah) | Corsica. | Rhodes (rōds) | Rhodes. |
| Cos (kos) | Stanchio. | Salamis (sal'a-mis) | Colouri. |
| Crete (krēt) | Candia. | Samothrace (samothrā'se) | Samothraki |
| Crepsa (krep'sah) | Cherso. | Samos (sā'mos) | Samos. |
| Cyprus (sī'prus) | Cyprus. | Sardinia (sar-din'e-ah) | Sardinia. |
| Cyth'nus (sith'nus) | Thermia. | Scyros (sī'ros) | Syra. |
| Cythera (si-thē'rah) | Cerigo | Seriphus (se-rī'fus) | Serpho. |
| Delos (dē'los) | Delos. | Sicily (sis'e-le) | Sicily. |
| Ebusus (eb'u-sus) | Ivica. | Siphnos (sif'nos) | Siphanto. |
| Eubœa (ū-bē'ah) | Negropont. | Stœchades (stēk'a-dēz) | Hieres. |
| Fortunate (for'tu-nate) | Isles, Canaries. | Strophades (strof'a-dēz) | Strivali. |
| Hesperides (hes-per'e-dēz) | Bissagos. | Syros (sī'ros) | Syra. |
| Hibernia (hi-ber'ne-ah) | Ireland. | Tenedos (ten'e-dos) | Tenedos. |
| Icaria (ī-kā're-ah) | Nicaria. | Tenos (tē'nos) | Tino. |
| Ilva (il'vah) | Elba. | Thasos (thā'sos) | Thaso. |
| Imbros (im'bros) | Imbro. | Thera (thē'rah) | Santorin, |
| Ios (ī'os) | Nio. | Thule (thū'le) | Shetland Isles. |
| Ithaca (ith'a-kah) | Theaki. | Vectis (vek'tis) | Isle of Wight. |
| | | Zacynthus (za-sin'thus) | Zante. |

## RIVERS.

### SARMATIA.

| | | | |
|---|---|---|---|
| Borysthenes (bo-ris'thē-nēz) | Dnieper. | Tanais (tan'a-is) | Don. |
| Hypanis (hip'a-nis) | Bog. | Taruntus (ta-run'tus) | Dwina. |
| Itha (rā) | Volga. | Tyras (tī'ras) | Dniester. |
| Rubo (rū'bo) | Niemen. | | |

### GERMANY.

| | | | |
|---|---|---|---|
| Albis (al'bis) | Elbe. | Rhenus (rē'nus) | Rhine. |
| Amisia (a-mizh'yah) | Ems. | Viadrus (vī'a-drus) | Oder. |
| Ister (is'tr) | Danube. | Visurgis (vi-sur'jis) | Weser. |
| Mœnus (mē'nus) | Mayne. | Vistula (vis'tu-lah) | Vistula. |

### GAUL.

| | | | |
|---|---|---|---|
| Arar (ā'rar) | Saone. | Mosel'la (mo-sel'lah) | Moselle. |
| Garumna (ga-rum'nah) | Garonne. | Rhodanus (rod'a-nus) | Rhone. |
| Liger (lī'jr) | Loire. | Scaldis (skal'dis) | Scheldt. |
| Mosa (mō'sah) | Meuse. | Sequana (sek'wah-nah) | Seine. |

### SPAIN.

| | | | |
|---|---|---|---|
| Anas (ā'nas) | Guadiana. | Iberus (ī-bē'rus) | Ebro. |
| Bœtis (bē'tis) | Guadalquiver. | Minius (min'e-us) | Minho. |
| Durius (dū're-us) | Duero. | Tagus (tā'gus) | Tagus. |

## ILLYRICUM, DACIA, &c.

| ANCIENT. | MODERN. |
|---|---|
| **Danubius** (da-nū′bē-us) | Danube. |
| **Dravus** (drā′vus) | Drave. |
| **Hebrus** (hē′brus) | Marizza. |
| **Œnus** (ē′nus) | Inn. |
| **Pyretus** (py-rē′tus) | Pruth. |
| **Savus** (sā′vus) | Save. |
| **Tibiscus** (ti-bis′kus) | Theis. |

## ITALY.

| | |
|---|---|
| **Addua** (ad′du-ah) | Adda. |
| **Anio** (ā′ne-o) | Teverone. |
| **Arnus** (ar′nus) | Arno. |
| **Athesis** (ath′e-sis) | Adige. |
| **Aufidus** (aw′fe-dus) | Ofanto. |
| **Eridanus** (e-rid′a-nus) | Po. |
| **Medoacus** (me-dō′a-kus) | Brenta. |
| **Metaurus** (me-taw′rus) | Metro. |
| **Mincius** (min′se-us) | Mincio. |
| **Padus** (pā′dus) | Po. |
| **Rubicon** (rū′be-kon) | Fiumecino. |
| **Tiber** (tī′ber) | Tiber. |
| **Ticinus** (ti-sī′nus) | Ticino. |
| **Vulturnus** (vul-tur′nus) | Volturno. |

## GREECE.

| | |
|---|---|
| **Achelous** (ak-e-lō′us), Aspro Potamo. | |
| **Alpheus** (al-fē′us) | Alfeo. |
| **Astræus** (as-trē′us) | Vistriza. |
| **Axius** (aks′e-us) | Vardar. |
| **Eurotas** (ū-rō′tas) | Basili. |
| **Evenus** (e-vē′nus) | Firari. |
| **Haliacmon** (ha-le-ak′mon) | Jenicoro. |
| **Peneus** (pe-nē′us) | Peneo. |
| **Strymon** (strī′mon) | Strimon. |

## ASIA.

| | |
|---|---|
| **Araxes** (a-raks′ēz) | Aras. |
| **Caicus** (ka-ī′kus) | Germaisti. |
| **Calycadnus**(kal-e-kad′nus) | Kalikdoni. |
| **Caystrus**) ka-is′trus) | Minderscare. |
| **Cyrus** (sī′rus) | Kur. |
| **Daix** (dā′iks), or **Yaik** (yā′ik) | Ural. |
| **Etymander**(et-e-man′der) | Hirmend. |
| **Eulæus**(ū-lē′us),or **Ulai**(ū′la-ī) | Karasu. |
| **Euphrates** (ū-frā′tēz) | Euphrates. |
| **Granicus** (gra-nī′kus) | Ousvola. |
| **Halys** (hā′lis) | Kizil-ermak. |
| **Hermus** (hur′mus) | Sarabat. |
| **Hydaspes** (hī-das′pēz) | Behat. |
| **Jaxartes** (jaks-ar′tēz) | Sir. |
| **Jordan** (jor′dn) | Jordan |
| **Lycus** (lī′kus) | Tonsalu. |
| **Mæander** (me-an′dr) | Meinder. |
| **Orontes** (o-ron′tēz) | Orontes. |
| **Oxus** (oks′us) | Jihon. |
| **Phasis** (fā′sis) | Rione. |
| **Pyramus** (pir′a-mus) | Geihoun. |
| **Sangarius** (san-gā′re-us) | Sakaria. |
| **Thermodon** (ther-mō′dn) | Termek. |
| **Tigris** (tī′gris) | Tigris. |

## AFRICA.

| | |
|---|---|
| **Bagradas** (bag′ra-das) | Mejerdah. |
| **Daradus** (dar′a-dus) | Senegal. |
| **Niger** (nī′jr) | Nijer. |
| **Nile** (nīl) | Nile. |
| **Stachir** (stā′chir) | Gambia. |

# CITIES AND TOWNS.

## GREAT BRITAIN.

| | |
|---|---|
| **Aquæ** (ā′kwe) **Solis**, or **Cal′idæ** | Bath. |
| **Camboricum** (kam-bor′e-kum) | Cambridge |
| **Cantabrigia**(kan-ta-brij′e-ah) | [bridge |
| **CastraAlata**(kas′traalā′ta) | Edinburgh |
| **Eboracum** (e-bor′a-kum, or eb-o-rā′kum) | York. |
| **Durovernum** (-ver′num) | Canterbury. |
| **Londinum** (lon-dī′num) | London. |
| **Londinium** (lon-din′e-um) | London. |
| **Luguvallum** (lu-gu-val′lum) | Carlisle. |
| **Oxonia** (oks-ō′ne-ah) | Oxford. |
| **Theodorunum**(theod-o-rū′num) | Wells |

## SPAIN.

| | |
|---|---|
| **Asturica** (as-tū′re-kah) | Astorga. |
| **Barcino** (bar′se-no) | Barcelona. |
| **Bilbilis** (bil′be-lis) | Calatayud. |
| **Cæsar** (sē′zr) **Augusta** | Saragossa. |
| **Calagurris** (kal-a-gur′ris) | Calahorra. |
| **Calle** (kal′le) | Oporto. |
| **Calpe** (kal′pe) | Gibraltar. |
| **Carthago**(karthā′go) **Nova** | Carthagena |
| **Complutum** (kom-plū′tum) | Alcala. |
| **Conimbrica** (ko-nim′bre-ka) | Coimbra. |
| **Corduba** (kor′du-bah) | Cordova. |
| **Gades** (gā′dēz) | Cadiz. |
| **Hispalis** (his′pa-lis) | Seville. |
| **Ilerda** (ī-ler′dah) | Lerida. |
| **Italica** (ī-tal′e-kah) | Santiponte. |
| **Malaca** (mal′a-kah) | Malaga. |
| **Munda** (mun′dah) | Monda. |
| **Numantia** (nu-man′te-ah) | Soria. |
| **Olisippo** (o-le-sip′po) | Lisbon. |
| **Pompelo** (pom′pe-lo) | Pampeluna. |
| **Saguntum** (sa-gun′tum) | Morviedro. |
| **Segovia** (se-gō′ve-ah) | Segovia. |
| **Tarraco** (tar′ra-ko) | Tarragona. |
| **Toletum** (to-lē′tum) | Toledo. |

## GAUL.

| ANCIENT. | MODERN. | ANCIENT. | MODERN. |
|---|---|---|---|
| **Aquæ Sextiæ** (ā'kwē seks'te-ē) | Aix. | **Forum Julii** (fō'rum jū'le-ī) | Frejus. |
| **Argentoratum** (ar-jen-to-rā'tum), | Strasburg. | **Geneva** (je-nē'vah) | Geneva. |
| **Avaricum** (av-a-rī'kum) | Bourges. | **Limonum** (lī-mō'num) | Poictiers. |
| **Avenio** (a-vē'ne-o) | Avignon. | **Lugdunum** (lug-dū'num) | Lyons. |
| **Aventicum** (av-en-tī'kum) | Avenches. | **Lutetia** (lu-tē'te-ah) | Paris. |
| **Augus'ta Tevero'rum** | Treves. | **Moguntiacum** (mo-gun-tī'a-kum) | Metz |
| **Bibracte** (bi-brak'te) | Autun. | **Narbo** (nar'bo) | Narbonne. |
| **Burdigala** (bur-dig'a-la) | Bordeaux. | **Nemausus** (ne-maw'sus) | Nismes. |
| **Colo'nia Agrippi'na** | Colegne. | **Rotomagus** (ro-tom'a-gus) | Rouen. |
| | | **Tolosa** (to-lō'sah) | Toulouse. |

## ITALY.

| | | | |
|---|---|---|---|
| **Agrigentum** (ag-re-jen'tum) | Girgenti. | **Mediolanum** (me-de-o-lā'num) | Milan. |
| **Alba Longa** (al'bah lon'gah) | Albano | **Mutina** (mū'te-nah) | Modena. |
| **Ancona** (an-kō'nah) | Ancona. | **Mantua** (man'tu-ah) | Mantua. |
| **Antium** (an'te-um) | Anzio | **Neapolis** (ne-ap'o-lis) | Naples. |
| **Appii** (ap'pe-ī) **Fo'rum** | Fossa Nuova | **Messana** (mes-sā'nah) | Messina. |
| **Aquileia** (ak-we-lē'yeh) | Aquileia | **Ostia** (os'te-ah) | Ostia. |
| **Aquinum** (a-kwī'num) | Aquino | **Pæstum** (pēs'tum) | Pesti. |
| **Ariminum** (a-rim'e-num) | Rimini. | **Panormus** (pa-nor'mus) | Palermo. |
| **Arpinum** (ar-pī'num) | Arpino. | **Parma** (par'mah) | Parma. |
| **Augus'ta Taurino'rum** | Turin. | **Parthenope** (par-then'o-pe) | Naples. |
| **Baiæ** (bā'e-ē) | Baia. | **Patavium** (pa-tā've-um) | Padua. |
| **Beneventum** (-e-ven'tum) | Benevento. | **Perusia** (pe-rū'se-ah) | Perugia. |
| **Bononia** (bo-nō'ne-ah) | Bologna. | **Pisæ** (pī'sē) | Pisa. |
| **Brundusium** (-dū'ze-um) | Brindisia. | **Placentia** (pla-sen'te-ah) | Placenza. |
| **Caieta** (ka-e-ē'tah) | Cajeta. | **Preneste** (pre-nes'te) | Palestrina. |
| **Callipolis** (kal-lip'o-lis) | Gallipoli. | **Puteoli** (pu-tē'o-li) | Pozzuolo. |
| **Canusium** (ka-nū'se-um) | Canosa. | **Ravenna** (ra-ven'nah) | Ravenna. |
| **Capua** (kap'u-ah) | Capua. | **Rhegium** (rē'je-um) | Reggio. |
| **Caralis** (kar'a-lis) | Cagliari. | **Salernum** (sa-ler'num) | Salerno. |
| **Catana** (kat'a-nah) | Catania. | **Scyllaceum** (sil-la-sē'um) | Squillace. |
| **Centum Cellæ** (sel'lē) | Civita Vecchia. | **Sena** (sē'nah) | Siena. |
| **Clusium** (klū'se-um) | Chiusi. | **Spoletium** (spo-lē'te-um) | Spoleto. |
| **Comum** (kō'mum) | Como. | **Tarentum** (ta-ren'tum) | Tarento. |
| **Cosentia** (ko-sen'te-ah) | Cosenza. | **Tergeste** (ter-jes'te) | Trieste. |
| **Crotona** (kro-tō'nah) | Crotona. | **Tibur** (tī'br) | Tivoli. |
| **Drepanum** (drep'a-num) | Trapani. | **Ticinum** (ti-sī'num) | Pavia. |
| **Faventia** (fa-ven'te-ah) | Faenza. | **Tridentum** (tri-den'tum) | Trent. |
| **Florentia** (flo-ren'te-ah) | Florence. | **Tusculum** (tus'ku-lum) | Frascati. |
| **Genua** (jen'u-ah) | Genoa. | **Venafrum** (ve-nā'frum) | Venafro. |
| **Hadria** (hā'dre-ah) | Adria. | **Venusia** (ve-nū'se-ah) | Venosa. |
| **Hydruntum** (hī-drun'tum) | Otranto. | **Vercellæ** (ver-sel'lē) | Vercelli. |
| **Interamna** (in-ter-am'nah) | Terni. | **Verona** (ve-rō'nah) | Verona. |
| **Leontini** (le-on-tī'nī) | Lentini. | **Vicentia** (vi-sen'te-ah) | Vicenza. |
| **Lilybæum** (lil-e-bē'um) | Marsala. | **Volsinium** (vol-sin'e-um) | Bolsena. |

## MACEDONIA.

| | | | |
|---|---|---|---|
| **Amphipolis** (am-fip'o-lis) | Emboli. | **Edessa** (e-des'sah) | Edessa. |
| **Apollonia** (ap-ol-lō'ne-ah) | Polina. | **Pella** (pel'lah) | Jenitza. |
| **Beræa** (be-rē'ah) | Veria. | **Potidæa** (pot-e-dē'ah) | Cassandra. |
| **Dium** (dī'um) | Standia. | **Stagira** (sta-jī'rah) | Stavros. |
| **Dyrrachium** (dir-rak'e-um) | Durazzo. | **Thessalonica** (thes-a-lo-nī'ka) | Salonica |

## GREECE.

| | | | |
|---|---|---|---|
| **Actium** (ak'te-um) | Agio. | **Cenchrea** (sen'kre-ah) | Kenkri |
| **Anticyra** (an-tis'e-rah) | Aspro-Spitia. | **Chalchis** (kal'sis) | Negropont. |
| **Argos** (ar'gos) | Argo. | **Corone** (ko-rō'ne) | Coron. |
| **Athens** (ath'enz) | Athens. | **Corinth** (kor'inth) | Corinth. |
| **Aulis** (aw'lis) | Megalo-Vathi. | **Cyllene** (sil-lē'ne) | Chiarenza. |

## GREECE.

| ANCIENT. | MODERN. | ANCIENT. | MODERN. |
|---|---|---|---|
| **Delphi** (del'fi) | Castri. | **Nicopolis** (ni-kop'o-lis) | Prevesa. |
| **Eleusis** (e-lū'sis) | Lepsina. | **Messene** (mes-sē'ne) | Macra-mathia. |
| **Epidaurus** (ep-e-daw'rus) | Pidaura. | **Nauplia** (naw'ple-ah) | Napoli. |
| **Lacedæmon** (las-e-dē'mon) | Paleo-chori | **Patræ** (pā'trē) | Patras. |
| **Larissa** (la-ris'sah) | Larissa. | **Pharsalia** (far-sā'le-ah) | Farsa. |
| **Leuctra** (lūk'trah) | Livadosta. | **Pylos** (pī'los) | Navarino. |
| **Methone** (me-thō'ne) | Modon. | **Sicyon** (sis'e-on) | Basilico. |
| **Megara** (meg'a-rah) | Megaro. | **Sparta** (spar'tah) | Paleo-chori. |
| **Naupactus** (naw-pak'tus) | Lepanto. | **Thebes** (thēbs) | Thiva. |

## ASIA MINOR.

| | | | |
|---|---|---|---|
| **Abydos** (a-bī'dos) | Nagara. | **Halicarnassus** (-kar-nas'sus) | Bodrum. |
| **Adramyttium** (-mit'e-um) | Adramiti. | **Iconium** (ī-kō'ne-um) | Konieh. |
| **Amasia** (a-mā'se-ah) | Amasia. | **Laodicea** (la-od-e-sē'ah) | Eski-hissar. |
| **Amisus** (a-mī'sus) | Samsoun. | **Mazaca** (maz'a-kah) | Kaisarieh. |
| **Ancyra** (an-sī'rah) | Angora. | **Miletus** (me-lē'tus) | Palatia. |
| **Antioch** (an'te-ok) | Akshehr. | **Nicomedia** (nik-o-me-dī'ah) | Is-Nicmid. |
| **Apamea** (-mē'ah) | Aphiom-Karahissar. | **Paphos** (pā'fos) | Baffa. |
| **Attalia** (at-a-lī'ah) | Satalia. | **Patara** (pat'a-rah) | Patera. |
| **Berisa** (be-rī'sah) | Tocat. | **Perga** (per-gah) | Kara-hissar. |
| **Cæsarea** (sēz-a-rē'ah) | Kaisarieh. | **Pergamos** (per'ga-mos) | Pergamo. |
| **Cerasus** (ser'a-sus) | Keresoun. | **Philadelphia** (-del'fe-ah) | Alah-Shehr. |
| **Chalcedon** (kal-sē'dn) | Kadi-Keni. | **Salamis** (sal'a-mis) | Constanza. |
| **Chrysopolis** (kri-sop'o-lis) | Scutari. | **Sardis** (sar'dis) | Sart. |
| **Clazomenæ** (kla-zom'e-nē) | Vourla. | **Seleucia** (se-lū'se-ah) | Selefke. |
| **Colossæ** (ko-los'sē) | Chonos. | **Tarsus** (tar'sus) | Tarso. |
| **Constantia** (-stan'te-ah) | Constanza. | **Telmissus** (tel-mis'sus) | Macri. |
| **Ephesus** (ef'e-sus) | Ajasoluc. | **Thyatira** (thi-a-tī'rah) | Akhissar. |
| **Eupatoria** (ū-pa-tō're-ah), | Tchernikeh. | **Trapezus** (tra-pē'zus) | Trebizond. |

## SYRIA, MESOPOTAMIA, &c.

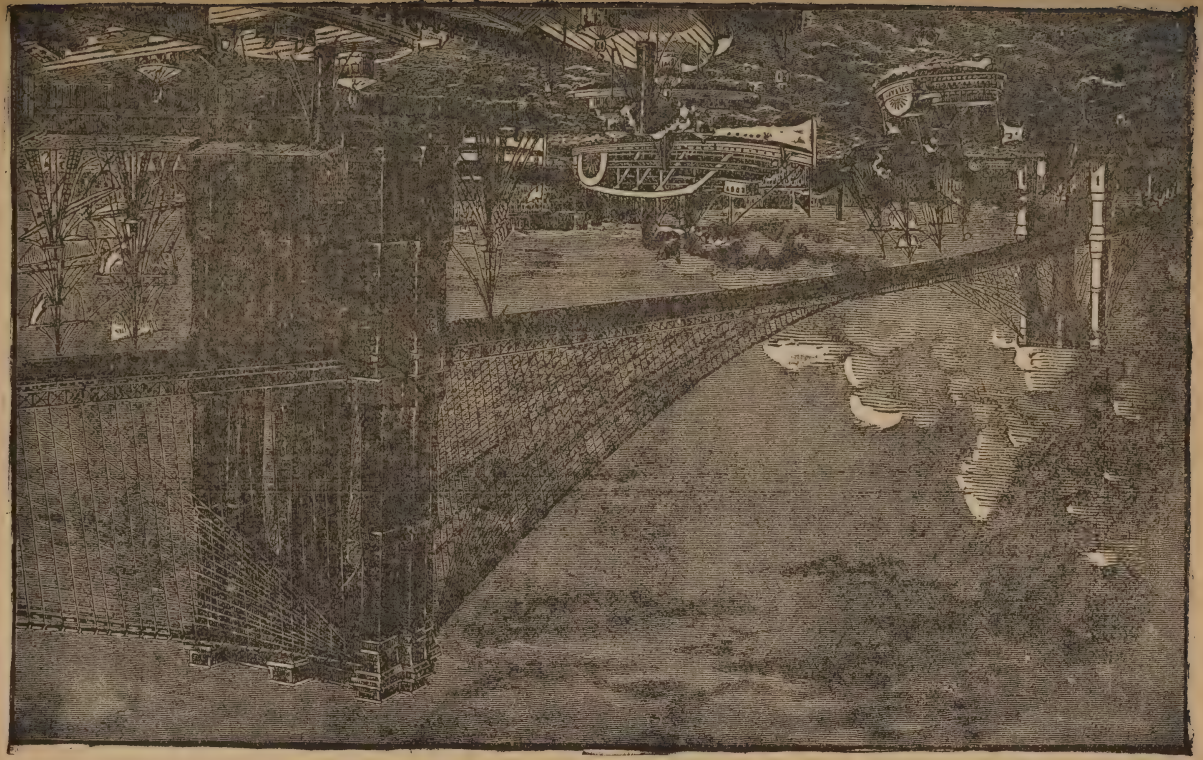
| | | | |
|---|---|---|---|
| **Antioch** (an'te-ok) | Antioch. | **Epiphania** (ep-e-fa-nī'ah) | Famieh. |
| **Apamela** (ap-a-mē'lah) | Famieh. | **Hierapolis** (hi-e-rap'o-lis), | Bambouch. |
| **Arbela** (ar-bē'lah) | Erbil. | **Laodicea** (la-od-e-sē'ah) | Latakia. |
| **Babylon** (bab'e-lon) | near Hellah. | **Nisibis** (nis'e-bis) | Nisidin. |
| **Beræa** (be-rē'ah) | Aleppo. | **Tadmor** (tad'mor) | Palmyra. |
| **Berytus** (ber'e-tus) | Beyrout. | **Samosata** (sa-mos'a-tah) | Samisat. |
| **Ctesiphon** (tes'e-fon) | Modain. | **Sarepta** (sa-rep'tah) | Sarfend. |
| **Ecbatana** (ek-bat'a-nah) | Hamadan. | **Seleucia** (se-lū'se-ah) | Bagdad. |
| **Edessa** (e-des'sah) | Ourfa. | **Sidon** (sī'dn) | Saida. |
| **Emesa** (e-mē'sah) | Hems. | **Tripolis** (trip'o-lis) | Tripoli. |
| **Heliopolis** (he-le-op'o-lis) | Balbec. | **Tyre** (tīr) | Sur. |

## PALESTINE.

| | | | |
|---|---|---|---|
| **Arimathea** (ar-e-ma-thē'ah) | Ramla. | **Jerusalem** (je-roo'sa-lem) | Jerusalem. |
| **Azotus** (a-zō'tus) | Ezdoud. | **Jezreel** (jez're-el) | Ezdraelon. |
| **Bethlehem** (beth'le-hem) | Bethlehem. | **Nazareth** (naz'a-reth) | Nazareth. |
| **Bethsan** (beth'san) | Baisan. | **Ptolemais** (tol-e-mā'is) | Acre. |
| **Emmaus** (em'ma-us) | Amoas. | **Samaria** (sa-mā're-ah) | Sebaste. |
| **Gaza** (gā'zah) | Gaza. | **Scythopolis** (si-thop'o-lis) | Baisan. |
| **Hebron** (hē'bron) | El Khail. | **Sephoris** (sef'o-ris) | Sephouri. |
| **Jericho** (jer'e-ko) | Jericho. | **Sychar** (sī'kar) | Nablous. |

## AFRICA.

| | | | |
|---|---|---|---|
| **Abydos** (a-bī'dos) | Madfune. | **Lycopolus** (li-kop'o-lus) | Suit. |
| **Arsinoe** (ar-sin'o-ē) | Suez. | **Œa** (ē'ah) | Tripoli. |
| **Cæsarea** (sēz-a-rē'ah) | Shershell. | **Ptolemais** (tol-e-mā'is) | Tolometa. |
| **Canopus** (ka-nō'pus) | Aboukir. | **Syene** (si-ē'ne) | Syene. |
| **Cirta** (sir'tah) | Constantina. | **Tingis** (tin'jis) | Tangier. |
| **Darnis** (dar'nis) | Derne. | **Utica** (ū'te-kah) | Boo-Shatter. |
| **Heliopolis** (he-le-op'o-lis) | Matarea. | **Zama** (zā'mah) | Zamah. |



## BRIEF HISTORY AND STATISTICS OF THE BROOKLYN BRIDGE

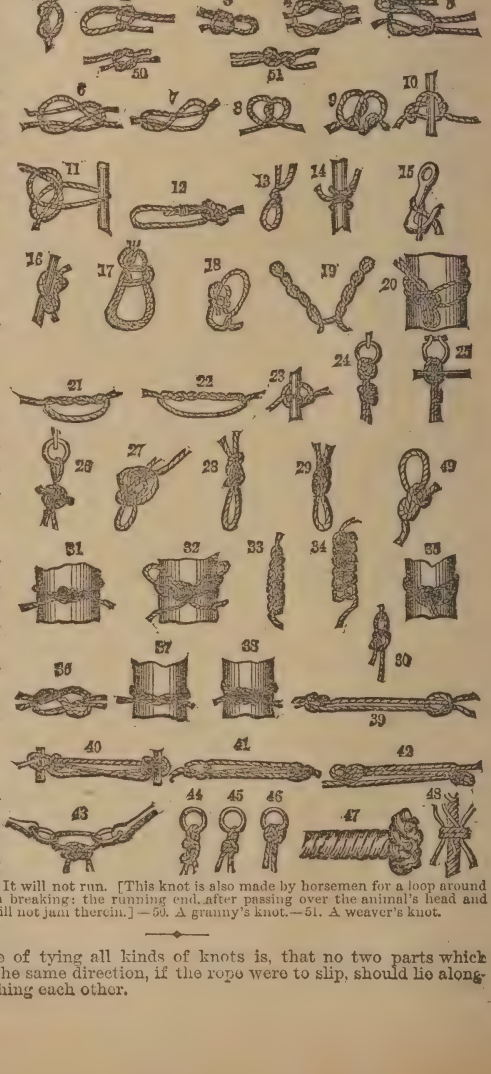
William C. Kingsley has plans and estimates drawn, 1865.
Henry C. Murphy introduces act of incorporation in Senate of New York, January 25, 1867. Act passed, April 16, 1867.
Act transferring Bridge to the two cities passed, June 5, 1874.
Company organized, May, 1867.
John A. Roebling appointed engineer, May 23, 1867.
John A. Roebling died, July 22, 1869.
Washington A. Roebling appointed engineer, July 1869.
Work commenced at the Brooklyn tower, January 3, 1870.
Brooklyn caisson towed to its berth, May, 2, 1870.
First blocks laid on it, June 16, 1870.
Excavation under it commenced, July 10, 1870.
Fire in the Brooklyn caisson, discovered, December 2, 1870.
Great fire in the Brooklyn caisson discovered, December 2, 1870.
Engineer Col. Roebling partially paralyzed, December 2, 1870.
Caisson filled and finished, March 11, 1871.
New York caisson towed to its berth, October, 1871.
Filled and finished in May, 1872.
Brooklyn tower completed, May, 1875.
New York tower completed, July 1876.
First wire rope stretched over the river, August 14, 1876.
First crossing on the wire, August 25, 1876.
Foot-bridge finished and crossed, February 9, 1877.
First cable wire run over and regulated, May 29, 1877.
Running and regulating cable wires commenced, June 11, 1877.
Last wire run over, October 5, 1878.
Strand broke loose, June 14, 1878.
Henry C. Murphy died, December 1, 1882.
Bridge opened, May 24, 1883.
Cars commenced running, September 24, 1883.
Length of New York approach, 1562½ feet.
Length of Brooklyn approach, 971 feet.
Size of anchorages at base, 129 x 119 feet.
Size of anchorages at top, 117 x 114 feet.
Hight of anchorages in front, 85 feet.
Hight of anchorages in rear, 80 feet.
Weight of anchorages, about 60,000 tons each.
Weight of anchor plates, each 23 tons.
Length of each land span, anchorage to tower, 930 feet.
Size of Brooklyn caisson, 168 x 102 feet.
Thickness of top of Brooklyn caisson, 15 feet.
Depth of Brooklyn foundations below high-water mark, 44½ ft.

Timber and iron in caisson, 5,253 cubic yards.
Concrete filled into Brooklyn caisson, 5,669 cubic feet.
Size of New York caisson, 172 x 102 feet.
Thickness of top of New York caisson, 22 feet.
Depth of New York foundations below high-water mark, 78½ ft.
Weight of New York caisson, 7,000 tons.
Concrete filled into New York caisson, 7,000 tons.
Bolts and angle irons of New York caisson, 250 tons.
Size of towers at high-water mark, 140 x 59 feet.
Size of towers at top, 136 x 53 feet.
Hight of roadway at towers, 119 feet.
Hight of arches above roadway, 117 feet.
Hight of towers above roadway, 159 feet.
Total hight of towers above high-water, 271 feet 6 inches.
Total hight of Brooklyn tower, base to summit, 316 feet.
Total hight of New York tower, base to summit, 350 feet.
Width of opening through towers, 33 feet 9 inches.
Cubic yards of masonry in New York tower, 46,945.
Cubic yards of masonry in Brooklyn tower, 38,214.
Length of main span, tower to tower, 1595 feet 6 inches.
Hight of main span above high-water mark, 135 feet 6 inches.
Number of cables, 4.
Diameter of cables, 15 feet 9 inches.
Length of each cable, 3,578 feet 6 inches.
Number of wires in each cable, 5,434.
Number of wires in the four cables, 21,736.
Total length of wire in each cable, unwrapped, 3,515 miles.
Total length of wire in the four cables, unwrapped, 14,060 miles.
Weight of wire, one pound to nearly 11 feet.
Greatest length of cable wire run in one day, 88 3-5 miles.
Length of wrapping wire on each cable, 243 miles 943 feet.
Weight of 4 cables, wrapped, 3,588½ tons.
Ultimate strength of each cable, 12,200 tons.
Greatest load that can come on one cable, 3,000 tons.
Number of suspenders from each cable, main span, 208.
Number of suspenders from each cable, land spans, 86.
Strength of a single suspender, 70 tons.
Greatest weight in a single suspender, 10 tons.
Number of postbands, each land span, one cable, 35.
Number of overfloor stays, 432.
Total length of bridge, 5,989 feet.
Full width of flooring, 85 feet.
Grade of roadway, 3½ feet in 100.
Natural elevation above high-water, Brooklyn terminus, 61½ ft.
Natural elevation above high-water, New York terminus, 38½ ft.
Weight of the whole suspended structure, 6,740 tons.
Maximum weight to be got in it, 1380 tons.
Maximum weight of roadway and traffic in cables, 6,920 tons.
Maximum weight of roadway and traffic on stays, 1190 tons.

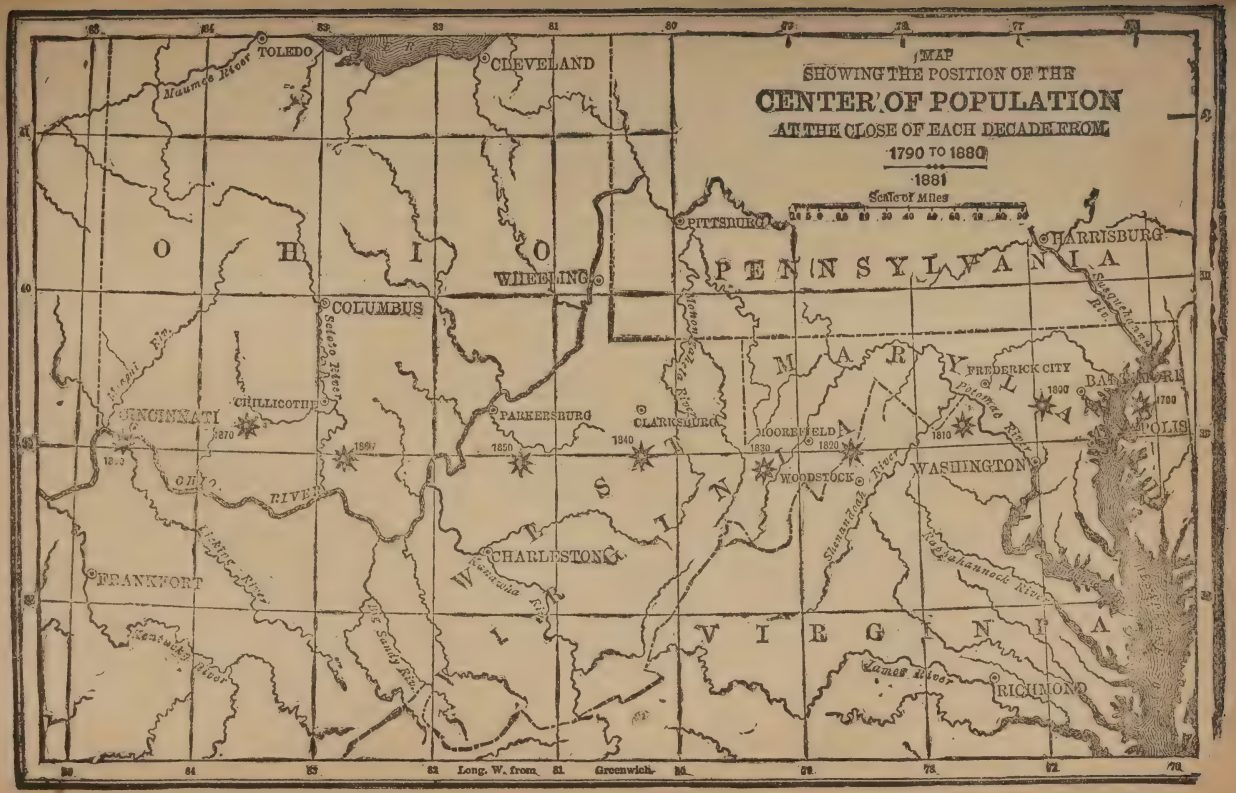
NORTH WILLIAM ST. ARCHES
FRANKLIN SQUARE.
SECTION OF BRIDGE

# KNOTS, AND HOW TO MAKE THEM

1. Simple overhand knot.
2. Slipknot, seized.
3. Single bowknot.
4. Square knot, or ruf-knot.
5. Square bowknot.
6. Weaver's knot.
7. German, or figure-of-8 knot.
8. Two half-hitches or artificer's knot
9. Double artificer's knot.
10. Simple galley-knot.
11. Capstan, or prolonged knot.
12. Bowline-knot.
13. Rolling-hitch.
14. Clove-hitch.
15. Blackwall hitch.
16. Timber-hitch.
17. Bowline-bight.
18. Running bowline
19. Catspaw.
20. Doubled running knot.
21. Double knot.
22. Sixfold knot.
23. Boat-knot.
24. Lark's head.
25. Lark's head.
26. Simple boat-knot
27. Loop-knot.
28. Double Flemish knot.
29. Running-knot, — checked.
30. Crossed running knot.
31. Lashing-knot.
32. Rosette.
33. Chain-knot.
34. Double chain-knot.
35. Double running-knot, with check-knot.
36. Double twist-knot.
37. Builders' knot.
38. Double Flemish knot.
39. English knot.
40. Shortening knot.
41. Shortening knot.
42. Sheepshank.
43. Dogshank.
44. Mooring-knot.
45. Mooring-knot.
46. Mooring-knot.
47. Pigtail worked on end of a rope.
48. Shroud-knot.
49. A knot used by sailors in making fast to a spar or a bucket before it is thrown overboard. It will not run. [This knot is also made by horsemen for a loop around the jaw of a colt in breaking: the running end, after passing over the animal's head and through the loop, will not jam therein.] — 50. A granny's knot. — 51. A weaver's knot.



The principle of tying all kinds of knots is, that no two parts which would move in the same direction, if the rope were to slip, should lie alongside of and touching each other.


MAP
SHOWING THE POSITION OF THE
CENTER OF POPULATION
AT THE CLOSE OF EACH DECADE FROM
1790 TO 1880
1881
Scale of Miles
TOLEDO
CLEVELAND
Maumee River
PITTSBURG
HARRISBURG
Susquehanna Riv.
O H I O
WHEELING
P E N N S Y L V A N I A
COLUMBUS
Scioto River
Monongahela River
M A R Y L A
FREDERICK CITY
Potomac River
BALTIMORE
POLIS
CHILLICOTHE
CINCINNATI
PARKERSBURG
CLARKSBURG
MOOREFIELD
WOODSTOCK
WASHINGTON
Shenandoah River
Rappahannock River
OHIO RIVER
Licking River
CHARLESTON
Kanawha Riv.
FRANKFORT
Kentucky River
Big Sandy Riv.
V I R G I N I A
James River
RICHMOND
1870
1860
1850
1840
1830
1820
1810
1800
1790
Long. W. from Greenwich.

# RULES OF PARLIAMENTARY PROCEDURE.

## CONDENSED RULES APPLICABLE TO REFERENCES ON OPPOSITE PAGE.

Trace each motion to its respective references on the next page, and you master at a glance the intricacies of Parliamentary usages, comprising some three hundred points of order:—

| | |
|---|---|
| Motion to adjourn | 1 a * B *a* II x |
| Motion to determine time to which to adjourn | 2 a † A *a* II x |
| Motion to amend | 3 a † A *a* II x |
| Motion to amend an amendment | 3 a * A *a* II x |
| Motion to amend the rules | 3 a † A *b* II x |
| Motion to appeal from Speaker's decision *in re* indecorum | 1 a † A *a* II y |
| Motion to appeal from Speaker's decision generally | 3 a * A *a* II y |
| Call to order | 1 a * A *a* III y |
| Motion to close debate on question | 1 a † A *b* II x |
| Motion to commit | 3 b † A *a* II x |
| Motion to extend limits of debate on question | 1 a † A *a* II x |
| Leave to continue speaking after indecorum | 1 a * A *a* II x |
| Motion that...do lie on the table | 1 a * C *a* II x |
| Motion to limit debate on question | 1 a † A *b* II x |
| Objection to consideration of question | 1 a * A *b* III y |
| Motion for the orders of the day | 1 a * A *a* III y |
| Motion to postpone to a definite time | 4 a † A *a* II x |
| Motion to postpone indefinitely | 3 b * A *a* II x |
| Motion for previous question | 1 a * A *b* II x |
| Questions touching priority of business | 1 a † A *a* II x |
| Questions of privilege | 3 a † A *a* II x |
| Reading papers | 1 a * A *a* II x |
| Motion to reconsider a debatable question | 3 b * B *a* II z |
| Motion to reconsider an undebatable question | 1 a * B *a* II z |
| Motion to refer a question | 3 b † A *a* II x |
| Motion that committee do now rise | 1 a * B *a* II x |
| Question whether subject shall be discussed | 1 a * A *b* III y |
| Motion to make subject a special order | 3 a † A *b* II x |
| To substitute in the nature of an amendment | 3 a † A *a* II x |
| Motion to suspend the rules | 1 a * B *b* II x |
| Motion to take from the table | 1 a * C *a* II x |
| To take up question out of its proper order | 1 a * A *b* II x |
| Motion to withdraw a motion | 1 a * A *a* II x |
| Questions of precedence of questions | 5 6 7 8 9 10 12 |
| Forms in which questions may be put | 13 14 15 16 17 18 19 |

## *RULES OF PARLIAMENTARY PROCEDURE.*

1. Question undebatable: sometimes remarks tacitly allowed.
2. Undebatable if another question is before the assembly.
3. Debatable question.
4. Limited debate only on propriety of postponement.

a. Does not allow reference to main question.
b. Opens the main question to debate.

*. Can not be amended.
†. May be amended.

A. Can be reconsidered.
B. Can not be reconsidered.
C. An affirmative vote on this question can not be reconsidered.

*b*. Requires two-third vote unless special rules have been enacted.
*a*. Simple majority suffices to determine the question.

II. Motion must be seconded.
III. Does not require to be seconded.

x. Not in order when another has the floor.
y. Always in order though another may have the floor.
z. May be moved and entered on the record when another has the floor, but the business then before the assembly may not be put aside. The motion must be made by one who voted with the prevailing side, and on the same day the original vote was taken.

5. Fixing the time to which an adjournment may be made; ranks first.
6. To adjourn without limitation; second.
7. Motion for the Orders of the Day; third.
8. Motion that...do lie on the table; fourth.
9. Motion for the previous question; fifth.
10. Motion to postpone definitely; sixth.
12. Motion to commit; seventh.
13. Motion to amend; eighth.
14. Motion to postpone indefinitely; ninth.

15. On motion to strike out words, "Shall the words stand part of the motion?" unless a majority sustains the words they are struck out.

16. On motion for previous question the form to be observed is, "Shall the main question be now put?" This, if carried, ends debate.

17. On an appeal from the Chair's decision, "Shall the decision be sustained as the ruling of the house?" The chair is generally sustained.

18. On motion for Orders of the Day, "Will the house now proceed to the Orders of the Day?" This, if carried, supersedes intervening motions.

19. When an objection is raised to considering question, "Shall the question be considered?" objection may be made by any member before debate has commenced, but not subsequently.

# OBJECTIONABLE WORDS AND TERMS.

**Allow,** for *expect, imagine, doubt not;* as, "I *allow* he will succeed." "I *allow* he will be in town to-morrow."

**Allow,** for *intend, design, purpose;* as, "I *allow* to go on Monday." "They *allow* to return next week."

**A power,** for a *large amount* or *quantity*, a *great number;* as, "He has a *power* (*a great amount* or *quantity*) of money; a *power* (*great number*) of friends," etc.

**After a bit,** for *soon* or *presently;* as, "I will be there *after a bit.*" "He will be along *after a bit.*"

**Ary,** for *either;* as, "Take *ary* one of them." "*Ary* one of you may go."

**Above my bent.**—"That is altogether above my bent," for, "out of my power," "beyond my strength," "beyond my capacity."

**All along of,** as, "That was all along of you," for, "that was all your fault."

**Anyhow,** when used too frequently, suggests that one is in the habit of talking "anyhow." *No how* is still more liable to objection.

**A'ry, na'ry.**—"I haven't a'ry one," "I have na'ry one." Say "I have neither," "I haven't either," "I have none." "I haven't got na'ry red." Very low. Say "I have not one cent."

**As how.**—"He said as how you was to do it." Say "he said that you were to do it."

**At loggerheads** is uncouth. If roughness of expression is not desired, say "at variance," or, "on ill terms," or speak of a *disagreement*, a *misunderstanding*, or a *quarrel.*

**Any,** for *at all;* as, "He was not injured *any.*" "He cannot see *any* from the effects of the accident."

**Averse from,** for *averse to;* as "A miser is *averse from* nothing so much as *from* parting with his money."

**Allot on,** or **'lot on,** for *rely on, count on,* or *upon;* as, "I *allot on,* or *'lot on* his ability and readiness to aid me."

**Among,** for *with;* as, "The deception passed *among* each of the company." "The money was current *among* every one of the banks."

**Among,** for *between,* where *two only* are referred to; as "He divided it *among* the two." "John and George were the persons *among* whom the estate was equally divided."

**A little ways,** for *a little way, a short distance;* as "I will go a *little ways* with you." "He is *a little ways* in advance of us."

**Awful,** for *disagreeable, ugly, disgusting,* etc.; as, "This is *awful* (*disagreeable*) medicine." "He has an *awful* (*ug,* countenance." "His conduct was *awful* (*disgusting*)."

**Ain't,** for *are not, am not;* as, "*Ain't* (*are* you *not*) going to the city?" "I *ain't* (*am not*)."

**After,** for *for;* as, "He has no regard *after* his father's commands."

**A good little bit,** for *a considerable time, a considerable distance,* etc.; as, "He has been gone *a good little bit.*" "He is *a good little bit* ahead, or in advance of you."

**A long mile,** for *a little over,* or *a little more than a mile;* as, "It is *a long mile* to the city."

**As good's go, as good's do it,** etc., for *may as well go, might as well do it,* etc.; as, "You'd *as good's go* (*you may as well go*) as stay." "You'd *as good's do it* (*you might as well do it*) as not."

**Budge,** for *move off, stir;* as "You have no right here—you must *budge* (*move off*)." "I will not *budge* (*stir*) an inch."

**Between,** or **betwixt,** for *among* or *amongst,* where *more than two* are referred to; as, "Let this be divided *between* the three."

**Bad box.**—"He is in a bad box" has a vulgar air. Say *bad predicament,* or *unpleasant situation.*

**Bamboozle** gives the impression of disrespect from which *deceive* and *mislead* are free.

**Barking up the wrong tree** is an expressive and comical back-woods phrase which is not found in cultivated circles.

**Bran new,** or *brand new* is condemned by some writers. It seems unobjectionable as a colloquialism, but should not be used too freely where dignity is to be regarded.

**Balance,** for *remainder;* as, "I move to retain the first section of the bill, and to strike out the *balance*." "I spent a part of the evening with a friend, and the *balance* at home." "A part of the army were killed, and the *balance* taken prisoners."

**Be,** for *are,* or *am;* as, "*Be* (*are*) you going to church? I *be* (am)."

**Be to be,** for *am to be,* or *must be;* as, "I *be to be* there at the hour appointed."

**Bad,** for *ill;* as, "The patient is very *bad*." "My friend is not so *bad* to-day as he was yesterday."

**Bimeby,** for *by and by,* or (which is, perhaps, in better use), *presently, soon, in a short time;* as, "I shall be there *bimeby*." "If you will come *bimeby,* I will return with you."

**Back,** for *ago;* as, "It was almost two years *back*." "It was a long time *back,* that I read the history of Cromwell."

**Bravely,** for *well,* or *intimately;* as, "I knew him *bravely*." "He knew me *bravely* before I came to the city."

**By Jupiter,** *By Jove, By Jimini,* and the like, are oaths by heathen gods.

**Bother, bother it, botheration,** *plague on it, plague take it, plague,* show the disposition to say worse things; only the will is not equal to the attempt. "Avoid even the appearance of evil." This should be enough on this point, without citing other illustrations.

**Bain't,** for *are not;* as, "They *bain't* at home."

**By good right,** for *by right;* as, "He is entitled, *by good rights* to the whole amount."

**Better,** for *more;* as, "It is *better* than a month since I saw him." "I have resided *better* than seven years in the city."

**Calculate,** for *purpose, design, intend;* as, "I *calculate* to go a journey." "I *calculate* to return in the spring."

**Calculation,** for *intention* or *design;* as, "It is my *calculation* to visit him on my return."

**Conceived,** for *expressed;* as, "His letter was *conceived* in the following words."

**Cleverly,** for *quite well,* or *in good health;* as, "How is your friend to-day? He is *cleverly;* or he is getting along *cleverly*."

**Cave in.**—Low. Say *give up, submit,* or *yield.*

**Considerable of,** for *a considerable;* as, "He is *considerable of* a poet," instead of "He is *a considerable* poet."

**'Cute.**—Say *acute, keen, sharp, intelligent.* The American use of this word corresponds nearly with the English idea of *clever.*

**Chance,** for *an appearance, prospect,* or *probability;* as, "There is a *chance,*" or, as many say, "a *smart chance,*" or, "a *right smart chance* of a shower."

**Call to be.**—"You have no call to be angry with me." Say "no occasion to be," or, "no reason for being."

**Chicken fixins** is a frivolous expression for which *trifles, small matters* or *little things* may be advantageously substituted.

**Clever,** as generally used in the United States, signifies *good natured, kind, accommodating.* In England it signifies *smart, ready, quick, apt.* This is its proper meaning.

**Curry favor** has an air of disrespect.

**Cut.**—It is an ungracious act to "cut" an acquaintance; but it is more ungracious to speak of it under that term.

**Clear out,** for *go away, be gone;* as, "You have been here long enough; so, *clear out.*"

**Curious,** for *excellent;* as, "These are *curious* apples." "This is *curious* wheat."

**Carry,** for *take* or *lead;* as, "*Carry* the horse to water."

**Come of,** for *overcome;* as, "He will soon *come of* that habit."

**Confide on,** for *confide in;* as, "You may *confide on* his honor." "They *confide on* what he says."

**Cahoot,** for *partnership* or *company;* as, "They do business in *cahoot* (*company*)." A very common vulgarism in the West.

**Chunk,** for *piece;* as, "He has a *chunk* of bread."

**Comeatable,** for *approachable;* as, "European monarchs are not easily *comeatable.*"

**Crack'd up,** for *represented, recommended;* as, "I found him by no means what he was *crack'd up* (*represented*) to be." "He was *crack'd up* (*recommended*) to me as a skillful teacher."

**Chomp,** corrupted from *champ,* to *chew loudly, greedily;* as, "The horse *chomps* his bit." "They *chomp* their food."

**Clip it,** for *to run with speed;* as, "You can get there before the coach starts, if you *clip it.*" "He was obliged to *clip it,* or he would have been too late."

**Cut,** for *to run;* as, "*Cut on.*" "Cut ahead."

**Different than,** for *different from;* as, "This is very *different than* that."

**Done,** for *did,* as, "He *done* the work."

**Dicker** is a colloquialism of wide currency for *bargain* or *trade*. It is not admitted in books nor favored in polite society.

**Dreadful fine** is a contradiction. Say very fine. *Dreadful*, like *awful*, is often misapplied in this way to qualify words of the contrary significance.

**Do don't, done gone,** together with *you uns*, are vulgarisms of the Southern plantation which it should be the first business of those addicted to them to disuse.

**Don't ought,** for *ought not;* as, "You *don't ought* to return evil for evil."

**Don't know as I shan't,** for *do not know but I shall;* as, "Shall you go to Boston to-day? I *don't know as I shan't.*"

**Done come,** for *come;* as, "You may now go and dine, as your brother is *done come.*"

**Differ with,** for *differ from;* as, "My plan *differs with* yours." "The Latin language *differs with* the Greek."

**Derights,** or **torights,** for *presently* or *directly;* as, "He will be here *derights.*" "I will do it *torights.*"

**Dump,** for *unload;* as, "You may *dump* your cart in the yard."

**In Dickens** we have a diminutive of *divil* (vulgarly pronounced *div'l*), the process of corruption being *Devilkins, Divilkins, Dilkins,* or *Divkins, Dickins* or *Dickens.*

**Disremember,** for *forget,* or *do not remember;* as, "I know him, but I *disremember* his name."

**Dragged out,** for *fatigued, exhausted;* as, "I have been so much deprived of my rest, of late, that I am *dragged out,*" or, as some qualify the phrase, by way of emphasis, "*fairly,*" or "*completely dragged out.*"

**Done up brown,** for *handsomely, thoroughly, effectually,* or *adroitly done;* as, "His defence of the prisoner was *done up brown.*" A very low phrase. So, in the other tenses of the verb; as, "He will *do it up brown.*" "He *did it up brown.*"

**Dreadful,** for *very, exceedingly, extremely;* as, "He is *dreadful* kind." "She is *dreadful* neat." "We are *dreadful* thirsty."

**Dassent,** to *venture,* for *dares not, dare not;* as, "He *dassent* (*dares not*) approach the cage." "We *dassent* (*dare not*) disobey our instructions."

**E'enamost,** for *almost;* as, "He is *e'enamost* through with the work." "He is *e'enamost* persuaded to be a Christian." A gross corruption.

**Extras,** for superfluities, should be allowed but limited use. It is generally frivolous. In some cases, as in hotel bills and house builders' bills, the objection is much less to the word than to the items included under it.

**Furnentz, or fornenst,** for *opposite*, or *opposite to;* as, "He lives *furnentz* the college." "I stood directly *furnentz* him."

**Fixed,** for *repaired;* as, "He *fixed* my watch."

*To fix* is *to make fast*, or *permanent;* to *set immovably*, etc.: hence, to *fix* a watch is to *stop* it, or *prevent it from "going;"* which, it must be admitted, is a very unsatisfactory mode of *repairing* that article.

*Fix, to prepare, to arrange, to adjust, to settle;* as, *To fix* (*prepare*) the room; *to fix* (*arrange*) the furniture; *to fix* (*adjust*) the harness; *to fix* (*settle*) the difficulty, though not thus defined in the English dictionaries, is, nevertheless, allowable, according to Webster and Worcester, both of whom give these several definitions of it, but as peculiar to the United States.

Neither of these, however, signifies *to mend*, or *repair* what is broken or worn out, nor have I been able to find *any* authority for this use of the term *fix*.

**Fix,** as a noun, for *state, situation, condition;* as, "He is in a bad *fix*." "They were in a worse *fix* than they ever were before."

**For,** for *of;* as, "He was accused *for* transcending his orders." "There is no need *for* his assistance."

**For good and all,** for *absolutely, entirely, forever;* as, "He has left the country *for good and all*." A low colloquial phrase.

**Fotch,** for *fetch*, or *bring;* as, "Will you *fotch* the water?" "*Fotch* the trunk up stairs."

**Firstly,** for *first;* as, *Firstly*, let us call the roll." "He was willing to join the expedition; but said he must *firstly* obtain the consent of his parents."

**Fizzle** should be applied only to inglorious failures, such as may be properly spoken of in ridicule. In other cases, say *fail, come to nothing*, or something that is not comtemptuous.

**Flare up.**—"When the subject was mentioned he flared up." Say "flew into a passion," "was enraged," "became violently excited," or "became very angry," or "got mad." Many would condemn the last. But it seems idiomatic, and is expressive.

**Full chisel.**—"He went full chisel" is an absurd expression. Say "as fast as he could," or, "he ran his best."

**Foot.**—"This pole is twelve foot long." Say "twelve feet long." It is customary, however, to say "a twelve foot pole," "a five inch pipe," etc

**Flunk.**—"He flunked out" is low. "He sneaked out," or "he backed out," are better expressions to denote a mean or cowardly abandonment of an enterprise. If the act was not mean or cowardly, say "he gave up," "he retired from the enterprise," "he abandoned the design," etc.

**Gumption,** for *skill, capacity, energy;* as, "He is a man of *gumption.*" "Some have more *gumption* than others."

**Gone up,** *gone up the spout, played out,* are of the lowest order of slang. The last is gambler's slang. There is never any occasion for the use of such expressions.

**Gump,** for *simpleton, blockhead;* as, "He is a great *gump.*" "I would not intrust the business to such a *gump.*"

**Good chunk of,** for *good sized;* as, "You have a *good chunk of* a horse." "He is a *good chunk of* a boy."

**Grand,** for *good, excellent;* as, "He is a *grand* fellow." "This is *grand* news."

**Gab,** for *loquacity, prate, idle talk;* as, "I will have no more of your *gab.*" "He was full of his *gab* the whole evening."

**Grub,** as a *noun,* for *food,* a *meal* or *lunch;* as, "Wait till I take a little *grub.*" "Have you had your *grub* this morning?"

**Heap,** as an *adverb,* for *much, very much, far;* as, "I think a *heap* (*much* or *very much*) of him." "I like him a *heap* (*far*) better than I do his brother."

**Hadn't ought,** for *ought not;* as, "You *hadn't ought* to address one in so rude a manner."

**His'n,** for *his* or *his own;* as, "This house is mine; that is *his'n.*"

*Your'n, our'n, their'n, her'n,* are similar contractions, and equally objectionable.

**Hain't, hasn't,** for *have not, has not;* as, "They *hain't* (*have not*) determined whether they will move into the country." "He *hasn't* (*has not*) been in the city these two weeks.

**Head over heels,** for *headlong,* or *heels over head;* as, "He tumbled *head over heels* into the water."

**He'll,** for *he will;* as, "If *he'll* visit his friend, *he'll* be tendered a conveyance; and *he'll* meet with a welcome as cordial as *he'll* receive during his journey."

**Have got to go,** etc., for *must go, am obliged to go, am compelled to go,* etc.; as, "I *have got to go* into the country." "I *have got to wait* till I receive a letter." "I *have got to obey* the orders of my commander."

**He's,** for *he is;* as, "*He's* an eloquent speaker." "He says *he's* seen what *he's* described, and *he's* generally believed."

The contractions, *I'm, I'd, I'll, thou'rt, thou'dst, he's, he'll, he'd, she's, she'll, she'd, 'tis, we've, we'll, we'd, we're, you've, you'll, you'd, you're, they've, they'll, they'd, they're, who'll, hain't, shan't,* and some others, are perhaps allowable in familiar conversation, and occasionally in poetry, but should be avoided in prose.

**Hoped,** for *helped;* as, "Who *hoped* you to get it?" "He *hoped* me out of the difficulty."

**Het,** or **heat,** for *heated;* as, "The iron is *het.*" "The water is *heat.*"

**Hait,** for *whit, particle, any at all;* as, "They had an abundance, but would not give him a *hait* (*any at all*)." "You have been so disobedient, you ought not to have one *hait* (*whit* or *particle*)."

**Half an eye.**—"I perceived with half an eye" is objectionable. *With a glance* expresses the sense intended by *half an eye.*

**Helter skelter,** *hurly burly, pell mell, topsy turvy,* and similar expressions, are colloquialisms. They should not be used except in writings of a very light character.

**"How's yourself, this morning,"** savors of the familiarity that breeds contempt. Say "good morning." "How do you do?"

**Housen,** for *houses;* as, "He is the owner of several *housen.*" "The enemy burned all the *housen* in the city."

**Hunk,** for *piece;* as, "He has a *hunk,* or a *large hunk* of bread." Interior of New England.

**Have went, has went,** etc., for *have gone, has gone,* etc.; as "Whither *have* they *went?*" "He *has went* in the steamboat."

**Honorary,** for *honorable;* as, "His conduct was very *honorary.*" "It was an *honorary* action."

**In,** for *into,* with verbs of action; as, "He got *in* the coach." "He went *in* the house." "He broke it *in* pieces."

**Incident,** for *liable;* as, "Man is *incident* to numerous evils."

**To "Jew down."**—To speak of "Jewing down" in connection with trying to get a seller to reduce the price of his goods, is to speak very offensive.

**Illy,** for *ill;* as, "They seem to be *illy* disposed." "He behaved very *illy* towards his friend."

**In,** for *for;* as, "I have not seen him *in* six weeks."

**Jam up,** used *adjectively;* a low barbarous phrase, which it is difficult to define by an exact equivalent; but as nearly as can be gathered from observation, signifying *good, very excellent;* as, "His credit is *jam up.*" "These apples are *jam up.*"

**Ju,** for *did you;* as, "*Ju* see the elephant?" "*Ju* ever see the like?" "*Ju* know the man?"

**Jounce,** for *jolt, shake* (both as a *noun* and a *verb*); as, "A hard trotting horse *jounces* the rider." "The axle broke, and we all came down with a *jounce.*"

**Know'd,** for *knew;* as, "I *know'd* him when he was a boy.' "I *know'd* when he arrived."

**Knew,** for *known;* as, "I have *knew* him these twenty years; and I must say, I have never *knew* an honester man."

**Kotch'd,** for *catched,* or *caught;* as, "They who set traps for others, often get *kotch'd* themselves."

**Kin,** for *can;* as, "*Kin* you read the French? I *kin* not."

**Lit,** for *lighted,* to *set fire to;* as, "He *lit* the candle." "The lamp was *lit.*" "The city was *lit* with gas."

**Lit,** for *lighted,* or *alighted; to descend, to fall on, to stoop from flight;* as, "The traveller *lit* from his carriage." "The arrow *lit* on the house." "The bird *lit* on the tree."

**La, Law,** and **Lawk** are vicious pronunciations of *Lord.* "Lauk a mercy on me" is "Lord have mercy on me."

**Like,** for *as, that, as though;* as, "He strikes *like* (*as*) I do." "I feel *like* (*that*) I ought to forgive him." "He looks *like* (*as though*) he could endure fatigue."

**Lay,** as a *noun,* for *bargain, price, terms;* as, "I refused to purchase the articles at such a *lay* (*bargain*)." "I sold the property at a good *lay* (*price*)." "He bought his goods on the same *lay* (*terms*) that I did mine."

**Leave me be,** for *let me be, leave me alone, let me alone;* as, "He had a good situation, and I concluded to *leave him be* (*let him be*); *i. e.,* permit him to stay, or remain where he was. "As I wish to sleep a little, you will please *leave me be* (*leave me alone*); *i. e.,* by myself, without company. "If you are unacquainted with type, just *leave it be* (*let it alone*); *i. e.,* do not touch it, do not meddle with it."

**Loss,** for *lose;* as, "Where did you *loss* it?" "You will *loss* more than you will gain by the enterprise."

**Lot,** contracted from *allot*, as a *verb*, for *design, intend, purpose;* as "I *'lot* to return in the autumn." "We *'lot* to be there at the time appointed."

**Lick,** as a *noun*, for *blow;* as, "He gave me a *lick* in the face." "Give him another *lick*."

**Learnt,** for *learned;* as, "George has *learnt* his lesson." "He *learnt* to read the French language."

**Let on,** or **let on to,** for *disclose, inform;* as, "If you know the fact, yet you must not *let on* (*disclose it*)." "Take this letter to your uncle, but do not *let on to* (*inform*) him that I am in the city."

**Lots** is a local expression for *a great many*, a *large quantity*. It is not a good word for public use.

**Local phrases of this class,** of which every part of the country has a number characteristic to itself, are sometimes found used in constructions that are extremely ludicrous. Persons who are sick are sometimes declared to be "mighty poorly." We have heard persons who had the ague spoken of as being "powerful weak." The backwoodsman whose family are all well, will communicate the fact to his neighbors by saying that "the old woman and the young ones are all alive and kicking." A shower with him is "a right smart sprinkle of rain;" if there have been many showers, he will remark that "we have had a heap of wet weather in these parts, lately." All such expressions are wrong.

**Mighty,** as an *adverb*, for *very, extremely, exceedingly;* as, "The boat was *mighty* near sinking." "He is *mighty* fond of reading." "It was a *mighty* cold day."

**Marry** is a corruption of the name of the Virgin Mary.

**Made out,** for *succeeded in;* as, "I *made out* to find him," instead of "*succeeded in* finding him." "We *made out* to get to the shore," instead of "*succeeded in* reaching the shore."

**Mought,** for might; as, "It *mought* have ruined him." "He *mought* have done better." "He *mought* have been wealthy and respected, had he been sober and industrious."

**Marble,** for *move off;* as, "If you do that again you must *marble*," *i. e.*, move quickly, be off immediately.

**Mayn't,** for *may not;* as, "You *mayn't* have another opportunity." "They *mayn't* be there when you arrive."

**Mustn't,** for *must not;* as, "You *mustn't* expect to improve

without study." "You *mustn't* depend so much upon others as upon yourself."

**Mad,** for *angry, vexed;* as, "He was very *mad* at their conduct." "It is folly to get *mad* at every one who may chance to differ with us.

**Never let on,** for *never mentioned, never disclosed,* or *developed;* as, "He communicated the secret to me, but I *never let on* to any one;" *i. e.,* "I never mentioned, disclosed, or divulged it to any one." "He spoke to me several times, but I *never let on* that I heard him;" *i. e.,* "I never seemed to hear him."

**Nippent,** for *impudent, impertinent;* as, "He gave much offence by his *nippent* expressions." "He was so *nippent* that his employer dismissed him."

**Never,** for *ever;* as, "They might be destroyed were they *never* so numerous." "He disregards the counsel of his friend, though given *never* so kindly."

**Nowheres,** for *nowwhere;* as, "It is *nowheres* to be found." "Such a passage is *nowheres* in the book."

**Of consequence,** as an *adverb,* for *consequently,* or *necessarily;* as, "Such a wicked course must, *of consequence,* result in his ruin."

**Ornary,** for *ordinary;* as, "He is a very *ornary* fellow." "I never listened to a more *ornary* address."

**Otherguess,** for *otherguise, very different from,* or *superior to;* as, "He will tell an *otherguess* story when he returns." "This is an *otherguess* lot of wheat than the other."

**Over,** for *of;* as, "He is an overseer *over* the public works." "His brother is overseer *over* the poor."

**Otherlike,** or **otherlike than,** for *different,* or *different from what;* as, "It is quite *otherlike* (*different*) in your friend's case." "It resulted *otherlike than* (*different from what*) I expected."

**Odd's boddikins** either refers to the nails under the name of bodkins, or to God's body.

**Ort,** and **ortn't,** for *ought* and *ought not;* as, "We *ort* to improve our time." "We *ortn't* to waste it in idleness."

**Odd splutter her nails** signifies *God's blood* and the *nails* which fastened Him to the cross.

**Of a majority,** for *majority,* or a *majority of;* as, "He is elected by five hundred *of a majority.*"

**Once in a while,** for *sometimes, occasionally;* as, "He will *once in a while* get drunk." "We go to the city *once in a while.*"

**Ouch,** for *oh*, used *interjectionally*, on receiving a sudden fright or injury; as, "*Ouch!* the boat is sinking!" "*Ouch!* that wasp stung me in the eye!"

**Preventative,** for *preventive;* as, "Industry and frugality are the surest *preventative* against poverty."

**Pucker,** for *passion, excitement, pertubation;* as, "You need not get into such a *pucker* about it." "He was in a great *pucker* when he heard of his defeat."

**Pair of stairs,** for *flight*, or *set of stairs;* as, "There were two *pair of stairs.*" "We ascended the first *pair of stairs.*"

**Pull wool over one's eyes,** implies contempt. Say *deceive, mislead, delude, make false representations* or *pretences.*

"To throw dust in one's eyes" is of the same import. Both expressions are sometimes applied with considerable force to characterize various kinds of trickery.

**Plunder,** for *baggage* or *luggage;* as, "Stranger, is that your *plunder?*" "How much *plunder* have you?"

**Peel,** for *fire-shovel;* as, "The *peel* is red-hot."

**Peek,** for *peep;* as, "It is ill manners to *peek* over a person who is writing." "What are you *peeking* at?"

**A precious mess,** *a pretty kettle of fish*, mean nothing. Unless there is something better to be said, say nothing.

**Pesky,** for *mischievous, troublesome, vexatious;* as, "He is a *pesky* boy." "They are a *pesky* set of fellows."

**Powerful,** as an *adverb*, for *very, extremely;* as, "It is a *powerful* cold day." "My friend is failing *powerful* fast."

**Pretty.**—This word is often abused by being placed before other adjectives in the fancy that it qualifies them. It does not, but is frequently made to appear in a ridiculous combination. "This basket is pretty large," "I am pretty tired," "he is pretty awkward," are instances. *Rather* conveys the sense that is intended in such cases. Some who misuse *pretty* make matters worse by pronouncing it "pooty," or "poorty."

**Pack,** for *carry;* as, "*Pack* the wood home." "He *packed* the fruit to the house."

**Quite,** used *adjectively*, for *considerable* or *large;* as, "They paid him *quite* an amount of money." "He has raised *quite* a quantity of wheat."

**Right,** for *very, quite;* as, "These peaches are *right* good." "Your friends are *right* well."

**Rugged,** for *healthy, hardy, robust;* as, "He is a *rugged* boy." "One should be *rugged* to endure fatigue."

**Reckon,** for *suppose, imagine;* as, "I *reckon* we shall have rain to-morrow." "You will not leave to-day, I *reckon.* I *reckon* I shall."

**Raise,** for *rise, to increase in value,* as, "Tobacco and cotton will *raise.*" "The stock is every day *raising.*"

So in the expressions, The bread will not *raise;* The river *raises;* The intransitive verb *rise* should be used, but, The yeast *raises* the bread, The rain *raises* the river, etc., are correct, because here the verb has an object.

**Rising,** for *more than, upwards of;* as, "It is *rising* two years since I saw him." "He was in the city *rising* a month."

**Rumpus,** for *riot, quarrel, confusion, noise, disturbance;* as, "Peaceable and quiet people always strive to avoid a *rumpus.*"

**Smart chance,** for *strong prospect,* or *probability;* as, "We have a *smart chance* of succeeding." "There is a *smart chance* of a frost to-night."

**Sight,** for *number, quantity, amount;* as, "What a *sight* (*number*) of people." "What a *sight* (*quantity*) of peaches." "What a *sight* (*amount*) of money."

**School,** for *shoal;* as, "We discovered a large *school* of herring." "*Schools* of fish were passing us constantly."

**Social,** for *society;* as, "The work may be found in the Boston *Social* Library."

**Scrouge,** as a *verb,* for *crowd;* as, "Do not *scrouge* me." "You *scrouge* me so that I cannot write."

**Set,** as a *noun,* for *railing, scolding, rebuke;* as, "I will give him a good *set.*" "He came in great rage, and I never before heard such a *set* as he gave them."

**Sot,** for *sat;* as, "He *sot* all night in his chair." "He *sot* beside me at the table."

**Spake,** for *spoke;* as, "He *spake* three hours in the open air." "I *spake* to him yesterday." Obsolete, except in Scripture.

**Says I,** for *said I;* as, "Who comes there? *says I.* A friend, *says he.*" "Good morning, *says you.* I am happy to see you, *says I.* Thank you, *says he.*"

**Sich,** for *such;* as, "*Sich* a man, in *sich* a dress, on *sich* a horse, at *sich* a time, under *sich* circumstances, would cut *sich* a figure, as we are not accustomed to witness."

**Scrape.**—"To get into a scrape." The expression is expressive, but is condemned as frivolous.

**Splurge, Splutter.**—"He made a great splurge," "he made a great splutter," convey the idea that no respect is intended.

**Stave off.**—"He staved off the case a week longer." Say "he delayed it," "put it off," or "had it delayed," or "put off."

**Swap** is not an elegant word. It will be well to confine it to trades in horses and jack-knives. Say *exchange*, *barter*, or *trade*.

**Slope,** for *abscond;* as, "When did he *slope?*"

**See** or **see'd,** for *saw;* as, "We *see* him last week." "I *see'd* him yesterday."

**Slice,** for *fire-shovel;* as, "Take up the coals with the *slice*."

**Spec,** for *speculation* or *profit;* as, "They made a good *spec* on their flour." "He seldom purchases an article, unless he can make a *spec* on it."

**Smacked,** for *ground;* as, "Can I have a little corn *smacked* at your mill?"

**Sauce,** for *impudence;* as, "They would have no more of his *sauce*." "Give me none of your *sauce*."

**Side-hill,** for *hill-side;* as, "He lives on the *side-hill*." "The dogs chased the fox along the *side-hill*."

**Skute,** *to run, to dart off suddenly.* See Marble.

**Some,** for *somewhat;* as, "My friend is *some* better." "Their prospects are *some* brighter."

**Spunk,** for *courage, spirit, activity;* as, "He is a man of *spunk*." "It requires some *spunk* to face an enemy."

**'Sdeath** and **'Sblood** are contractions of *His death* and *His blood*, or of *God's death* and *God's blood*. The latter phrase is sometimes disguised as *Odsplut*, and in this form it occurs in Mother Goose's melodies.

**Tote** or **toat,** as a *verb* for *carry, convey, remove;* as, "*Tote* the water home." "*Tote* the wood to the house." "*Tote* the trunk up stairs."

**Tote,** as a *noun*, or more commonly, **the whole tote,** for *the whole lot*, or *the whole quantity;* as, "You may have *the whole tote* for five dollars." "I would not give a sixpence for the *tote*."

So *kit* is sometimes used in the same sense; as, "Take *the whole kit*."

**Them's 'um.**—Say "those are the ones," or. sometimes, "that is so."

**Thought a pity of him,** for *felt pity for him,* or *pitied him;* as, "He appeared so much distressed at his loss, that I *thought a pity of him.*" "Indeed, I often *think a pity* of those blind people."

**Take on.**—"She takes on about it dreadfully." Say "she grieves about it very much," or "to excess," or "excessively," but not "tremendously."

**There's the books.**—Say "there are the books."

**'Tain't,** for *it is not, has not;* as, "'*Tain't* (*it is not*) his book." "'*Tain't* (*it has not*) been a week since I saw him." A gross barbarism.

**To,** for *at;* as, "He lives *to* the west end of the street." "You may see him *to* his own house."

**To,** for *of;* as, "He passed me, but I never took any notice *to* him." "Did you take notice *to* the eclipse?"

**Till,** for *to;* as, "He has gone *till* Boston." "The cars run every day from New York *till* Philadelphia."

**Tell apart,** for *distinguish;* as, "Their resemblance was so striking, that I could not *tell* them *apart,*" instead of "*could not distinguish them,*" or "*could not distinguish* the one from the other."

**Tough,** for *hard, rigorous, difficult;* as, "They had a *tough* (*hard*) bargain." "We have had a *tough* (*rigorous*) winter." "They have a *tough* (*difficult*) job on hand."

**Tight match,** for *difficulty* or *with difficulty;* as, "They succeeded in reaching the shore, but they had a *tight match* to do it," instead of, "They had *difficulty* to do it," or, "They did it with *difficulty.*"

**Tushes,** for *tusks;* as, "The animal had large *tushes.*"

**'Tisn't,** for *it is not;* as, "'*Tisn't* any more than I paid for it." "I think '*tisn't* as much."

**Ugly,** for *bad, morose, ill-tempered;* as, "She is beautiful, but I am sorry to say, she is very *ugly.*" "He is a very fine looking man, but so *ugly,* that he is continually in a quarrel with somebody."

**Universal,** for the adjective *universalist;* as, "He is a *universal* preacher."

**Unbeknown,** for *unknown;* as, "Your friend is in the city, but he arrived *unbeknown* to me." "They lived for several years in the same neighborhood, wholly *unbeknown* to each other."

**Used to could, used to was.**—"I used to could do it." Say "I could once do it," or "I used to be able to it." "I used

to was a great checker player." "Say "I was once," or "I used to be a fine checker player."

**Up one hill and down another** (a kind of adverbial phrase); as, "He travelled *up one hill and down another*," instead of saying "He travelled *up and down hill*," or which is perhaps more elegant, as well as sufficiently definite, "He travelled *over a hilly road*," or "*a very hilly road.*"

**Vow** (in familiar style), for *declare, assert, asseverate;* as, "I *vow* (*declare*) he shall leave my premises." "He *vows* (*asserts*) positively that he did not do it." "They continued to *vow* (*asseverate*) their innocence of the crime."

**Will,** for *shall;* as, "*Will* I help you to a piece of the fowl?" "I hope I *will* see you again."

*Shall,* also, is sometimes improperly used for *will;* thus reversing the respective uses of the two terms, as in the expression of the foreigner who had fallen overboard: "I *will* drown, and nobody *shall* help me!"

**Wee bit,** used substantively, for *small piece, small quantity,* etc.; as, "He has a *wee bit* (*small piece*) of bread." "They have only a *wee bit* (*small quantity*) of flour."

**Wee bit,** used adjectively, for *small,* or *very small;* as, "They crossed the river in a *wee bit* of a boat." "He purchased a *wee bit* of a pony."

**What,** as a *conjunction,* for *that;* as, "I do not know but *what* I shall leave town to-morrow." "There are none so rich but *what* they may become poor."

**Which,** used interrogatively for *what;* as, when the person addressed does not distinctly hear, or fully comprehend the speaker, he says, "*Which?*"

This pronoun should never be employed interrogatively, except to inquire concerning *one* or *two* or *more,* as, *Which man?* meaning *which one man* of the *two* or *more men,* alluded to, is intended. Hence, when a speaker has uttered but *one thing,* or alluded to but *one person* or *thing,* to say "*Which?*" *i. e.,* to ask *which one* it was, is absurd.

**Worst kind,** for *very much, exceedingly;* as, "We want a schoolteacher in our district, the *worst kind.*"

**Wery,** for *very;* **weal,** for *veal;* **wenison,** for *venison;* **etc.;** as, "I am *wery* fond of *weal* and *wenison.*" "He is neither *wery vicious* nor *wery wirtuous,* but he is *wery wain.*"

A sailor belonging to Massachusetts narrates the perils and incidents of his late voyage in this wise: "We left Martha's *Winyard* in the steamship *Wermonth*, and proceeded on our *woyage* towards the Cape de *Werd* Islands. Owing to some *willainous* neglect of our safety *walve;* and while our *wessel* was moving over the *wast* ocean with *wery* great *welocity*, our boiler burst with a noise like a *wolley* of artillery, or the *woice* of an earthquake, sending up a *wolume* of smoke and flame like the *wapors* of a *wolcano*, and threatening to send every *wictim* on board to the *wortex* of destruction."

**At auction,** for *by auction;* as, "The property will be sold *at* public auction, if not disposed of *at* private sale."

**Authority,** for *authorities;* as, "A contract was entered into with the *authority* of the college.

**After night,** for *evening;* as, "A meeting will be held in the court house, *after night*." "Being otherwise engaged through the day, he reads *after night*."

**Any manner of means,** for *any means;* as, "He will endeavor to carry his point by *any manner of means*."

**Admired,** for *was pleased;* as, "I *admired* to hear her sing."

**Applicant,** for *student;* as, "To become learned, one must be a close *applicant*." An *applicant* is a *petitioner;* a *student*, a *scholar* or *learner*."

**Betterments,** for *improvements;* as, "He refused to relinquish his title to the land, till he had received pay for his *betterments*."

**Bother,** for *pother, bustle, perplexity, confusion;* as, "There was so much *bother* that I could not proceed with the business."

**Alone,** for *single,* or *only;* as, "The whole busines was accomplished by the *alone* (*single*) efforts of one man."

**Cutter,** for *sleigh;* as, "They rode in a *cutter*." "He took a *cutter*-ride."

**Chock,** or **Chuck,** for *quite;* as, The pitcher is *chock* full." or "*chuck* full."

**Chunky,** for *chubby* (*short and thick*); as, "He is a *chunky* boy." "The man is rather *chunky*."

**Chirk,** for *lively, cheerful;* as, "My friend was very sad yesterday, but to day he is quite *chirk*." New England.

**Brash,** for *brittle;* as, "The timber is *brash*."

**Crank,** for *pert, saucy;* as, "He was so *crank* that he was little respected." New England.

**Dabster,** for *adept;* as, "I had supposed him unskilled in the business, but found him a *dabster* at it."

**Desk,** for *pulpit;* as, "We attended the Presbyterian church, and sat in a pew near the *desk*."

**Either,** for *each* or *both;* as, "A fort was built on *either* side of the river."

**Folk,** or **folks,** for *people, persons, individuals;* as, "An unusual number of *folks* assembled on the occasion." Nearly obsolete, except in Scripture.

**Hearken,** for *listen;* as, "*Hearken* to what I say." "If you wish to hear, you must *hearken* attentively." Obsolete, except in Scripture.

**Guess,** for *know;* as, I *guess* I have done wrong."

**Jeopardize,** for *jeopard;* as, "He declared his willingness to *jeopardize* his life for his country."

**Is being built, are being made, etc.,** for *is building, are making, etc.;* as, "The house *is being built*." "Arrangements *are being made* for their departure."

**Lift,** for *to take up, collect, receive;* as, "They are about to *lift* a contribution." Penn.

**Jurisprudence,** for *law;* as, "He is studying *jurisprudence,*" meaning the common law.

**Keeping-room,** for *parlor;* as, "He spent the whole evening in the *keeping-room*."

**Methinks,** for *I think,* or *it seems to me;* as, "*Methinks* he might have succeeded, had he made a proper effort."

**Mind,** for *remember, recollect;* as, "Do you *mind* how many chapters there are in Job?" "I *mind* the day of the month he left."

**Motion,** for *move;* as, "I *motion* that the bill lie on the table."

**Miss,** for *Misses,* in addressing two young or unmarried ladies; as, "The company of the *two Miss Smiths* is requested," etc.

**Needs,** for *need;* as, "Vice *needs* only to be seen to be hated." "He *needs* not expect wealth without industry."

**Notified;** as, "The public are hereby *notified,*" for "*Notice* is hereby given to the public."

**Overhaul,** for *overtake, i. e., to gain upon in a chase;* as, "He was so far in advance, that I could not *overhaul* him."

**Observation,** for *observance;* as, "The *observation* of the Sabbath is a duty incumbent upon all people."

**Overflown,** for *overflowed;* as, "The river has *overflown* its banks."

**Poorly,** used as an *adjective,* for *feeble, indisposed, somewhat ill;* as, "He is very *poorly.*" "My friend is too *poorly* to pursue his journey."

**Put out,** for *offended,* or *affronted;* as, "I was much *put out* at his conduct."

**Peradventure,** for *perhaps, perchance, it may be;* as, "*Peradventure,* he may never return."

**Proven,** for *proved;* as, "His guilt was clearly *proven.*"

**Plead,** for *pleaded;* as, "He *plead* the case of the prisoner." "They *plead* the Statute of Limitations."

**Polt,** for *blow;* as, "He received a *polt* on the head." "Give him another *polt.*"

**Raised,** for *reared,* or (according to many respectable writers), *brought up;* as, "He has *raised* a large family."

**Roiled,** for *disturbed, ruffled, offended;* as, "The news *roiled* him considerably."

**Stricken,** for *struck;* as, "His name was *stricken* from the list."

**Smart,** for *able;* as, "Story was a *smart* judge." "Bonaparte was a *smart* general."

**Spell,** for *awhile, time;* as, "He desired to rest a *spell* (*awhile*)." "They resided in the city a long *spell* (*time*)."

**Temper,** for *passion;* as, "He exhibited a violent *temper* on the occasion."

**Then,** as an *adjective;* as, "He was a friend to the *then* administration.

**To let,** for *to be let;* as in the very common phrase, "This house *to let.*"

**Tarry,** for *stay,* or *remain;* as, "Please *tarry* here until I return." Obsolete, except in poetry and allusions to Scriptural subjects.

**Turnpike,** for *turnpike road;* as, "He travelled on the National *Turnpike,*" or, more commonly, "*pike.*"

**Without,** for *unless;* as, "I will not go *without* you do." "*Without* you study, you cannot improve."

**Yon,** for *yonder, that;* as, "*Yon* ship." "*Yon* moon." "*Yon* tree."

**Yank,** for *jerk, twitch;* as, "He yanked it off."

**Zooks, Adzooks.**—*God's hooks*, that is, the hooks which were supposed to have been used for the same purpose.

**Zounds!** an interjection of frequent occurrence in English novels, is a curtailment and corruption of *His wounds*, or *God's wounds*, that is, the wounds received by Christ on the cross.

**Neck-handkerchief.**—Say *neck-kerchief*. A neck-kerchief is a kerchief for the neck, as a hand-kerchief is a kerchief for the hand. A *neck-handkerchief* does not exist.

**Luck.**—"He met with *luck*." Say also what kind of luck. There are good luck and bad luck. But the adjective *lucky*, and the adverb *luckily*, refer to the good kind only.

**Cannot.**—When inability is expressed *can* and *not* are joined as above. In this case the adverb *not* qualifies *can*, and does not qualify any other word. Sometimes *not* follows *can* without qualifying it, but passes its force to some succeeding word, and some other meaning than that of inability is given. Then it is not joined to *can*. "John can not only swim; he can also row, and knows how to manage a sail."

**Confusion of rights.**—"The Americans said they had no right to pay the taxes." "That they were under no obligation," or "ought not to be obliged to pay the taxes," was meant. So, the aggrieved person in a carriage, who was stopped by a procession, and said "the street cars have as much right to be stopped as the carriages," meant that they ought to be as liable to be stopped, or that "the carriages have as much right to go on as the street cars."

**Were accustomed to be made.**—There are a variety of errors of similar form to this and frequent in occurrence. In a report of a sermon by an eminent divine, we have, "The representations that were accustomed to be made." He should have said "representations that were ordinarily made," or that "it was the custom to make."

**Was attempted to be.**—A newspaper paragraph had, "the government was attempted to be attacked," for "an attempt was made to attack and government." Carlyle commits the same error, saying "weights and measures were attempted to be changed."

**Bills are requested.**—"Bills are requested to be paid quarterly." It is hard enough to make the persons who owe the bills pay them when they are requested to. Say "it is requested that

bills be paid quarterly," or better, "payment of bills is requested, or expected, quarterly."

**Not requested to,** for *requested not to.* Requests have been sometimes made in a left-handed manner, as follows: "Passengers are not requested to stand on the gangway." Say "passengers are requested not to stand," etc.

**Means** is either singular or plural, according to the sense of the sentence. "By this means they bear witness to each other,"—provided a single matter of testimony is referred to. To employ *mean* for the singular is incorrect.

**One of the family.**—"Wanted, two apprentices, who will be treated as one of the family." Say "will be treated as members of the family."

**All ages and both sexes.**—Do not say "persons of all ages and sexes participated in the proceedings," but, "persons of all ages and both sexes participated in the proceedings." There are but two sexes.

**Tooth-ache, etc.**—Say *tooth-ache, white-toothed, calves-foot jelly,* and not—imagining that the words must be plural in form—*teeth-ache, white-teethed, calves-feet jelly.*

**Mr. Pecksniff and wife.**—A person travelling with his wife in registering at the hotels should write, "Mr. Pecksniff and wife," not "Mr. Pecksniff and lady," as is too often written. The wife has a right to her true title and dignity in all places and on all occasions. One may travel with a lady who is not his wife. One who travels with his wife and respects her as he should, should leave no room for doubts.

**Gentleman friend, lady friend.**—Instead of "my gentleman friend," say "my friend Mr. Handy." Instead of "my lady friend," say "my friend Miss Smith, or Mrs. Crooks."

**Old Gentleman, old lady.**—The terms *old man, old woman,* though there is nothing essentially wrong in them, have come to be considered vulgar and disrespectful. Almost universal usage is against employing them, and favors *old gentleman, old lady.* These are therefore the correct terms.

**Such expressions** as, "I do not like too much sugar," "I do not want to walk too far," are indefinite. They mean, "I do not like more sugar than I like," "I do not want to walk further than I like."

**Brilliant, magnificent, splendid,** are too often used in

connection with objects which have none of those qualities. That is *brilliant* which glitters and sparkles in the light. That is *splendid* which shines, whether by its own or reflected light. That is *magnificent* which makes a grand appearance. It may be splendid and brilliant too. What does not sparkle cannot be *brilliant*, except figuratively; what does not shine cannot be *splendid;* what does not impose by grandeur cannot be *magnificent*. There are numerous words which may be employed with exact application in the cases in which these words are improperly used. *Pretty, handsome, beautiful, elegant*, will answer for most purposes. When such words—the proper ones—are used, they leave the stronger words with their full force to characterize objects which having extraordinary qualities, require more than ordinary words of description.

**Charming, enchanting, fascinating,** and many other words are similarly misused. That is *charming* which charms; that is *enchanting* which enchants; that is *fascinating* which fascinates. Each of the terms indicates the possession or exercise by the object spoken of, of qualities which deprive one of control of himself.

## AMERICANISMS.

**At auction.**—We sell *at* auction in America; they sell *by* auction in England.

**Boatable waters.**—Waters on which boats pass, and ships do not.

**Boating.**—Conveying in boats.

**Bank-bill.**—*Bank-bill* in England is a *post-note*, and does not pass into the general currency. In America, *bank-bill* is a *bank-note*, of whatever character or denomination.

**Brush,** in America; *small limbs of trees*, in England.

**Book-store,** in America; *book-seller's shop*, in England.

**Chore** (small jobs of domestic work), in America; *char*, in England.

**Cheques** or **checks,** in America; *draughts*, in England.

**Clever,** in America, means *moral excellence;* in England, *intellectual adroitness.*

**Caucus.**—A word said to have been coined in one of our eastern cities, from a room occupied by *caulkers*, assembled for consultation.

**Clothier,** in America, *one who dresses cloth;* in England *one who manufactures cloth.*

**Coal.**—We burn *coal;* the English burn *coals.*

**Clergyman,** in America, is applied to ministers of all religious denominations; in England it is confined to ministers of the established church.

**Driver,** in America; *coachman,* in England.

**Freshet,** in America; *rise of river,* in England.

**Fall,** in America; *autumn,* in England. *Autumn* is used in America also.

**For sale,** in America; *on sale,* in England.

**Forks of the road,** in America; *division of the road,* in England.

**Girdle trees.**—To make a circular incision like a belt, through the bark, in order to kill them; never used in the same sense in England; indeed, they have no occasion for it.

**Groceries** (articles of merchandise), in America; *grocery,* in England.

**Grocery,** meaning a *building,* in America; *grocery-shop,* in England.

**Get the floor** (as in Congress), in America; *take possession of the floor* (as in Parliament), in England.

**Help,** in America; *servants,* in England.

**Hub** (part of a wheel), in America; *nave,* in England.

**Hudson river,** putting the *name first,* in America; *river Thames,* putting the *name last,* in England.

**Have arrived,** in America; *are arrived,* in England.

**Insurance,** in America; *assurance,* in England.

**Locate,** in America; *to place,* in England.

**Location,** in America; *situation,* in England.

**Lot,** in America; *field* or *close,* in England.

**Merchant,** in America, is applied to *any respectable dealer;* in England, it means *a commercial man.*

**Notify of,** in America; *notify to,* in England.

**Portage,** in America; *carrying place,* in England.

**Raise wheat,** in America; *grow wheat,* in England.

**Rapids,** in America, applied to rivers; not so in England.

**Sleigh,** in America; *sledge,* in England; and they apply it to what we call *sled.*

**Scow,** in America; *lighter,* in England. We also use *lighter.*

**Stage,** in America, is applied to the *vehicle;* in England, it denotes a certain *space gone over;* as, "To ride one stage."

**Subscriber,** in America; *undersigned,* in England. In America, however, we observe to some extent, a distinction between *petitions* and mere *subscription papers,* using *undersigned* in the former, and *subscriber* in the latter.

**Steamboat,** in America; *steamer,* in England. We also use *steamer.*

**Store,** in America, the place where goods are *sold;* in England, the place where goods are *stored.*

**Shop,** in America, the building in which mechanics work, and is called a *mechanics' shop;* in England, it is the place *where goods are sold.*

**To deed land,** in America; *to convey land,* in England.

**To let or to rent,** in America; *to be let* or *to be rented,* in England.

**Wharves,** in America; *wharfs,* in England.

**Mail,** in America; *post,* in England. We *mail* a letter, the Englishman *posts* it.

**Rooster,** the male barn-yard fowl, in America; *cock,* in England.

**Suspenders,** in America; *braces,* in England.

**Corn,** *maize,* in America; *grain* in general, in England.

**On** for *in.* We say he lives *on* Nassau street; the English say, he lives *in.*

**Switch,** to change cars to another track; in England to *shunt,* &c.

**Creek,** in America, a *stream* larger than a brook, but less than a river; in England a small arm of the sea.

**Dress,** in America; in England, a *gown.*

**Tickets.** We buy *tickets,* way or through, on railroads; the Englishman is *booked.*

**Calico,** in America, *printed cotton;* in England, *unprinted cotton.*

**Woods.** We walk in the *woods;* the English walk in a *wood.*

**Hack,** in America, *a hackey coach;* in England, *a horse* for casual hire.

# FALSE PRONUNCIATION CORRECTED.

## PRINCIPLES OF CORRECT PRONUNCIATION.

Pronunciation is just when every letter has its proper sound, and every syllable has its proper accent or quality.—*Dr. Johnson.*

THE difficulties of pronunciation arise from the nature of language; the imperfections of alphabets, and the ignorance, carelessness or affectation of the generality of speakers.

These difficulties are so numerous that it would be impossible to notice them all, even in the most cursory manner, in so small a work.

We shall, however, give a few general principles which will be found to embrace almost all that is useful in practice.

1. The ANALOGIES of the language, the AUTHORITY of lexicographers, and above all, the CUSTOM of the most correct and elegant speakers, are the guides to which we must refer in all cases of difficulty. Nor can these difficulties, in every case, be resolved by such references; for we shall often find analogy opposed to analogy, authority to authority, and custom divided, even among the most elegant speakers.

2. In cases in which custom or authority is divided, we should give the preference to the pronunciation which is most in accordance with analogy. The word *Rome*, for instance, should be pronounced *róme* rather than *room;* and this is beginning to be the case, though the latter pronunciation was once thought "irrevocably fixed in the language."

3. The three great and prevailing errors in pronunciation are VULGARITY, PEDANTRY, and AFFECTATION. Against each of these faults we should be constantly on our guard; but most of all against AFFECTATION; for it is by far the most odious.

4. The following excellent observations from Dr. Johnson deserve particular attention:—

"For PRONUNCIATION, the best general rule is to consider

those of the most elegant speakers who deviate least from the written words. Of English, as of all living tongues, there is a double pronunciation, one cursory and colloquial, the other regular and solemn. The cursory pronunciation is always vague and uncertain, being made different in different mouths by negligence, unskillfulness, and affectation. The solemn pronunciation, though by no means immutable and permanent, is always less remote from the orthography, and less liable to capricious innovation."

5. Every word of two or more syllables has in pronunciation a certain ACCENT, that is, a peculiar stress or force laid upon a particular syllable.

If the accent in any word is misplaced, the pronunciation is injured or destroyed. Compare, for instance, the different pronunciations of *refu'se* and *ref'use; desert'* and *des'ert; minu'te* and *min'ute.*

*a.* Some words, in addition to the principal, have a SECONDARY, or weaker accent; as in

| | | |
|---|---|---|
| Ad″verti″se, | Ab'sente″e, | Com'plaisan″t, |
| Ar″tizan', | Ben″efac'tor, | Con'versa″tion. |

6. The general tendency of our language is to accent the root, and not the termination of a word. Hence the natural position of the accent in English words is in the first syllable. As a general rule, therefore, English or Saxon words should have the accent on the first syllable.

This general rule is exemplified not only by the usual position of the accent in English or Saxon words, particularly in DISSYLLABLES and TRISYLLABLES, but also by the tendency which we observe in our language to bring words of foreign origin under the English or radical accent.

*a.* The words *memoir*, *bouquet* and *reservoir*, for instance, have been brought under the English accent, and *complaisant*, *balcony*, *revenue*, *cravat*, *saline*, and many others, are on the way. Hence also the popular pronunciation of the word *police* (namely *pó-lis*); and the colloquial, but now recognized pronunciation of *boatswain*, (*bo'sn*), *cockswain* (*cock'sn*), *cupboard* (*cupburd*), etc. Many foreign words, however, particularly Frenc have struggled successfully against the English tendency; as

| | | | |
|---|---|---|---|
| Antique | Critique | Palanquin | Ravine |
| Brazil | Fascine | Profile | Recitative |
| Bombazin | Fatigue | Quarantine | Repartee |
| Caprice | Grimace | Machine | Routine |

| | | | |
|---|---|---|---|
| Capuchin | Invalid | Marine | Tambourine |
| Chagrin | Pelisse | Magazine | Tontine |
| Chemise | Police | Mandarin | Unique |

*b.* With regard to words of Greek or Latin origin, it may be laid down as a general rule, that when they are adopted whole or without change the accent or quantity of the original word is usually preserved; as in

| | | | |
|---|---|---|---|
| Anath′ema | Dilem′ma | Diplo′ma | Hori′zon |
| Acu′men | Bitu′men | Deco′rum | Specta′tor |

*c.* In many such words, however, the English tendency has prevailed; as in

| | | | |
|---|---|---|---|
| Or′ator | Sen′ator | Aud′itor | Pleth′ora |

7. This tendency is, however, counteracted to a certain extent by another natural tendency in the language. In words used as verbs, the tendency of the accent is to the termination, and not to the root. Hence, in verbs of two syllables, the accent is generally on the last, and in verbs of three syllables, on the last, or last but one.

*a.* Hence the unsettled position of the accent in such words as

| | | |
|---|---|---|
| Confiscate | Contemplate | Enervate |
| Compensate | Demonstrate | Extirpate |

Some authorities, following the general tendency, place the accent on the first syllable, as *com′pensate;* while others hold that, as verbs, it is better to accent the second syllable, as *compen′sate.*

8. The radical accent is also counteracted by the tendency in compound or derivative words to follow the accent of their primaries; as in

| | | | |
|---|---|---|---|
| Admi′rer | from admi′re | Begin′ning | from begin′ |
| Abet′tor | " abet′ | Commen′cement | " commen′ce |
| Profess′or | " profess′ | Commit′tal | " commit′ |
| Assail′able | " assail′ | Coquet′ry | " coquet′te |

*a.* In many cases, however, the radical or general tendency of the accent has prevailed; as in

| | | | |
|---|---|---|---|
| Ad′mirable | from admi′re | Adver′tisement | from adverti′se |
| Com′parable | " compa′re | Chas′tisement | " chasti′se |
| Lam′entable | " lament′ | Dis′putant | " dispu′te |

*b.* In several words the contest is, as yet, undecided; as in

| | |
|---|---|
| Ac′ceptable or accept′able | Dis′putable or dispu′table |
| Com′mendable or commend′able | Con′fessor or confess′or |

9. The tendency in compound or derivative words to preserve the accent of their primaries, is crossed by another natural tendency, namely, the disposition in compound or derivative words to shorten the long sounds or syllables of their primaries; as in the following words:—

| | | | | | |
|---|---|---|---|---|---|
| Depravity | from | deprave | Maintenance | from | maintain |
| Severity | " | severe | Shepherd | " | sheepherd |
| Divinity | " | divine | Splenetic | " | spleen |
| Consolatory | " | console | Gosling | " | goose |
| Granary | " | grain | Throttle | " | throat |
| Villainy | " | villain | Pronunciation | " | pronounce |
| Desperate | " | despair | Southerly | " | south |

10. ACCENT, from its very nature, must affect not only the syllable under it, but also the syllable next it; for in proportion as the one is dwelt upon, the other is passed quickly over. This is exemplified by the usual pronunciation of the unaccented syllable in the following words:—

| | | | |
|---|---|---|---|
| Cab'bage | Fur'nace | Cli'mate | Cap'tain |
| Courage | Menace | Curate | Fountain |
| Image | Palace | Prelate | Villain |
| Village | Solace | Private | Britain |
| For'eign | Fa'vor | Fa'mous | Car'riage |
| Forfeit | Fervor | Pious | Marriage |
| Surfeit | Humor | Pompous | Parliament |
| Sovereign | Labor | Monstrous | William |

In the preceding words the unaccented syllable is pronounced quickly and indistinctly; and in the case of a diphthong, one of the vowels is omitted altogether in the pronunciation. Compare, for example, the different sounds of the termination *age* in the words *cab'bage* and *enga'ge*, *pres'age* and *presa'ge*. Compare, also, the different pronunciations of the accented and unaccented syllables in the following words:—

| | | | |
|---|---|---|---|
| Contain' | Cap'tain | Retain' | Foun'tain |
| Allay' | Sun'day | Ally' | Sal'ly |
| Deceit' | For'feit | Conceit' | Sur'feit |
| Perceive | For'eign | Survey' | Sur'vey |

11. Hence it is that such combinations as *ea*, *ia*, *ie*, *eo*, *io*, *eous*, *ious*, following an *accented* syllable, are, in pronunciation, usually drawn into one sound or syllable, though composed of more than one vowel; as in

| | | | |
|---|---|---|---|
| Ocean | (*o'shan*) | Surgeon | (*sur'jun*) |
| Logician | (*lo-jish'an*) | Luncheon | (*lun'shun*) |
| Social | (*so'shal*) | Pension | (*pen'shun*) |
| Partial | (*par'shal*) | Mention | (*men'shun*) |
| Conscience | (*con'shense*) | Gorgeous | (*gor'jus*) |
| Patient | (*pa'shent*) | Gracious | (*gra'shus*) |

*a.* And when *c*, *s*, or *t* precedes any of these combination, it has, by the quickness of the enunciation, and the consequent blending of its sound with the vowel, the force of *sh*, as in the examples just given.

*b.* Hence the terminations *cial*, *sial*, and *tial*, are pronounced like *shal*; as in commer*cial*, controver*sial*, and mar*tial*.

*c.* The terminations *ceous*, *cious*, and *tious* are pronounced like *shus*; as in farina*ceous*, capa*cious*, and conten*tious*.

*d.* The terminations *geous* and *gious* are pronounced like *jus*; as in coura*geous* and re*ligious*.

*e.* The terminations *sion* and *tion* are pronounced like *shun*; as in mis*sion* and inven*tion*; but the termination *sion*, preceded by a vowel, is pronounced like *zhun*; as in explo*sion* and confu*sion*.

12. The seat of the accent will generally serve as a guide in the pronunciation of final syllables in ICE, ILE, INE, ISE, and ITE. When the *i* is accented, it is long, and when unaccented, it is usually short; as in the following words:—

| | | | |
|---|---|---|---|
| Advice | Nov'ice | Suffice | Of'fice |
| Revile | Ser'vile | Combine | Doct'rine |
| Premise | Prem'ise | Despite | Res'pite |
| Av'arice | Clandes'tine | Jac'obine | Def'inite |
| Ben'efice | Cor'alline | Jes'samine | Ex'quisite |
| Cow'ardice | Dis'cipline | Lib'ertine | Fa'vorite |
| Ju'venile | Eg'lantine | Mas'culine | Hyp'ocrite |
| Mer'cantile | Fem'inine | Med'icine | Indef'inite |
| Pu'erile | Gen'uine | Nec'tarine | In'finite |
| Adaman'tine | Her'oine | Pal'atine | Op'posite |
| Al'kaline | Hy'aline | Ap'posite | Per'quisite |
| A'quiline | Ima''gine | Compos'ite | Req'uisite |

13. In such terminations, that is, final syllables in ICE, ILE, and ITE, the *i* is sometimes long, though not under the accent; as in the following words:—

| | | | |
|---|---|---|---|
| Cock'atrice | Brig'antine | Mus'cadine | Anc'horite |
| Sac'rifice | Cal'amine | Por'cupine | Ap'petite |
| Croc'odile | Col'umbine | Sac'charine | Bed'lamite |
| Cham'omile | Crys'talline | Sat'urnine | Car'melite |

| | | | |
|---|---|---|---|
| Rec'oncile | Gel'atine | Ser'pentine | Ex'pedite |
| In'fantile | Incar'nadine | Tur'pentine | Er'emite |
| In'fantine | Leg'atine | U'terine | Par'asite |
| As'inine | Le'onine | Ac'onite | Sat'ellite |

*a.* It should be observed, however, that in each of the preceding words the *i* is evidently under a secondary accent, and therefore inclined to be long.—See No. 5.

14. As we have already observed, a proper accentuation of words is essential to their just pronunciation; and a proper accentuation can only be acquired by attending to the most correct speakers, and by consulting the most approved Dictionaries; for words are under so many influences with regard to their accentuation, that it is scarcely possible to lay down a rule on the subject to which numerous exceptions may not be found. The following rules, however (in addition to the GENERAL PRINCIPLES which we have already explained), will be found useful to the learner:

15. Words ending in *cial, sial, tial, cian, tian, cient, tient, ceous, cious, tious, sion, tion, tiate,* have the accent on the preceding syllable; as

| | | | |
|---|---|---|---|
| Provin'cial | Physi''cian | Pa'tient | Confu'sion |
| Controver'sial | Chris'tian | Gra'cious | Muta'tion |
| Substan'tial | An'cient | Senten'tious | Ingra'tiate |

16. Words ending in *ety, ity,* or *ical,* have also the accent on the preceding syllable; as

| | | | |
|---|---|---|---|
| Propri'ety | Insensibil'ity | Astronom'ical | Emphat'ical |
| Sati'ety | Spontane'ity | Categor'ical | Polem'ical |

17. When the termination *ical* is abbreviated into *ic,* the accent of the original word remains; as

| | | | |
|---|---|---|---|
| Astronom'ic | Emphat'ic | Harmon'ic | Polem'ic |
| Angel'ic | Fanat'ic | Mechan'ic | Specif'ic |

18. In English, as has been observed, the favorite accent in polysyllables is on the *antepenult,* or last syllable but two; but in many cases the accent has been transferred to that position from the *radical* part of the word, for the greater harmony and ease of pronunciation; as in

| | | | |
|---|---|---|---|
| An'gel | Angel'ical | Sa'tan | Satan'ical |
| Har'mony | Harmo'nious | Sa'tire | Satir'ical |
| Rhet'oric | Rhetor'ical | Vic'tory | Victo'rious |

19. In uniting simple words into a compound, there is a ten-

dency to simplify the compound as much as possible, by throwing the accent on that syllable in which the simple words unite. Hence, words with the following terminations have the accent on the antepenult, or last syllable but two:—

| | |
|---|---|
| *-cracy*, as democ′racy | *-mathy*, as polym′athy |
| *-ferous*, as somnif′erous | *-meter*, as barom′eter |
| *-fluent*, as circum′fluent | *-nomy*, as econ′omy |
| *-fluous*, as super′fluous | *-parous*, as ovip′arous |
| *-gamy*, as polyg′amy | *-pathy*, as antip′athy |
| *-gonal*, as diag′onal | *-phony*, as eu′phony |
| *-graphy*, as geog′raphy | *-strophe*, as catas′trophe |
| *-logy*, as philol′ogy | *-tomy*, as anat′omy |
| *-loquy*, as ventril′oquy | *-vomous*, as igniv′omous |
| *-machy*, as logom′achy | *-vorous*, as omniv′orous |

*a.* Some words are differently ACCENTED, according as they are used as NOUNS or VERBS.

20. Of foreign words admitted into our language, particularly French, there is usually a threefold pronunciation. 1. The original or foreign pronunciation. 2. The English pronunciation. 3. A pronunciation which is neither English nor foreign, but between the two. In this case, the middle course is not the best; but it is perhaps right to encourage it as a step in advance towards an honest English pronunciation.

21. Some Greek and Latin words retain the pronunciation of *e* final, though in such a position in English, it is always silent; as in

| | | | |
|---|---|---|---|
| Acme | Catastrophe | Strophe | Cicerone |
| Apostrophe | Epitome | Recipe | Finale |
| Anemone | Hyperbole | Simile | Rationale |

22. The diphthong *au* before *n* and another consonant should be sounded like the long Italian *a*, as in *far* and *father*. In some words of this class, however, it is pronounced, particularly by persons who are ambitious of being thought to speak better than their neighbors, like *aw* in *awe*. AVAUNT and VAUNT are perhaps the only words of this class which should be considered as exceptions.

## A LIST OF WORDS COMMONLY MISPRONOUNCED OR IMPERFECTLY ARTICULATED.

THE article *a* is slurred by most persons, being mispronounced like an indistinct *ur*: *a* book is mispronounced *ur* book. The article *a* should always be pronounced distinctly, like *a* in repeating the alphabet fast, as *a*, b, c, etc. When emphatic, it should be pronounced like *a* in repeating the alphabet slowly, as *a*,—b,—c, etc.

As should be pronounced *az*, not *uz*.

Avoid a too broad or too slender pronunciation of the vowel *a*, in such words as command, glass, etc. Some persons vulgarly pronounce the *a* in such words, as if it were written *ar*, and others mince it so as to rhyme with *stand*. The same observation applies to the vowel *o*, which many persons pronounce as if written *aw*, as *caw*'-fe, instead of *cof*'-fe, while others mince it into *cuf*'-fe. Equally avoid the extremes of vulgarity and affectation.

A.

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Again** | a-gane' | a-gen' |
| **Azure** | a'zhur | a'zhure |
| **Andiron** | hand'i-urn | and'i-urn |
| **Antipodes** | an'te-podz | an-tip'o-deez |
| **Apparent** | ap-pa'rent | ap-par'ent |
| **Auxiliary** | awks-il'a-re | awg-zil'ya-re |
| **Attack** | at-tact' | at-tak' |
| **Adept** | ad'dep | a-dept' |
| **Accuracy** | ac're-ce | ak'ku-ra-ce |
| **Arithmetic** | a-reth'ma-tik | a-rith'me-tik |
| **Appointed** | ap-pint'ed | ap-point'ed |
| **Afraid** | a-feerd' | a-frade' |
| **After** | ar'tur | af'tur |
| **Across** | akrost' | a-kross |
| **Academy** | kad'de-me | a-kad'de-me |
| **April** | a'prile | a'pril |
| **Ancient** | an'tshunt | ane'tshent |
| **Always** | ol'lurs | al'waze |
| **Access** | ak'sess | ak-sess' |
| **Admirable** | ad-mi'ra-bl | ad'mir-a-bl |
| **Ague** | a'gur | a'gu |
| **Alien** | a'le-in | ale'yen |
| **Almonds** | al'munz | ah'mundz |
| **Alpine** | al'pine | al'pin |
| **Alternate** | ol-tur'nate | al-tur'nate |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Angel** | an´jel | ane jel |
| **Artificer** | ar-te-fis´ur | ar-tif fe-sur |
| **Arduous** | ar´du-us | ar´ju-us |
| **Arrow** | ar´rur | ar´ro |
| **Asylum** | as´sa-lum | a-si-lum |
| **Aunt** | awnt | ant |
| **Apostle** | apos-tle | apos-el |
| **Awkward** | awk-urd | awk-ward |
| **Asparagus** | sparrow-grass | as-par-agus |

B.

| | | |
|---|---|---|
| **Beard** | bard | beerd |
| **Been** | ben | bin |
| **Bleat** | blaat | bleet |
| **Bonnet** | bun´net | bon´net |
| **Barrel** | barl | bar´ril |
| **Boil** | bile | boil |
| **Bellows** | bel´lus | bel´lows |
| **Broil** | brile | broil |
| **Because** | be-cos | be-cawz |
| **Burst** | bust | burst |
| **Bachelor** | bacheldor | bach-elor |
| **Barbarous** | barbarious | bar-barous |
| **Blasphemous** | blasphemious | blas´-phemous |
| **Broccoli** | brokkilow | broc´-coli |
| **Bade** | bade | bad |
| **Beat** | bet | beat |
| **Before** | beef-for | be-four |
| **Biography** | beography | bi-ography |
| **Buoy** | boy | bwoy |

C.

| | | |
|---|---|---|
| **Camphor** | kam´fire | kam´fir |
| **Canal** | ka-nawl´ | ka-nal´ |
| **Catch** | ketch | katch |
| **Chimney** | tshim´ble | tshim´ne |
| **Chalice** | kal´is | tshal´is |
| **Choir** | koir | kwire |
| **Clinch** | klensh | klinsh |
| **Column** | kol´yum | kol´lum |
| **Combat** | kom´bat | kum´bat |
| **Comma** | kom´me | kom´ma |
| **Coquet** | ko´kwet | ko-ket´ |
| **Corps** | korps | kore |
| **Cover** | kiv´ur | kuv´ur |
| **Creature** | krit´tur | kre´tshure |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Crept** | krep | krept |
| **Comfort** | kum´fut | kum´furt |
| **Concern** | kon-sarn´ | kon-sern´ |
| **Contract** | kon´trak | kon´trakt |
| **Cottage** | kot´tidge | kot´tage |
| **Chair** | tsheer | tshare |
| **Chaise** | shay | shaze |
| **Children** | tshil´dun | tshil´dren |
| **Coverlet** | kiv´ur-lid | kuv´ur-let |
| **Camlet** | kamb´let | kam´let |
| **Courteous** | kore´te-us | kurt´e-us |
| **Cowardice** | kow´urd-ise | kow´urd-is |
| **Can** | kin | kan |
| **Caprice** | kap´ris | ka-prees´ |
| **Century** | sent´re | sen´tshu-re |
| **Chivalry** | tshiv´al-re | shiv´al-re |
| **Comparable** | kom-par´a-bl | kom´pa-ra-bl |
| **Compensate** | kom-pen´sate | kom´pen-sate |
| **Comrade** | kum´rade | kom´rade |
| **Conspiracy** | kon-spi´ra-se | kon-spir´a-se |
| **Courtesy** | kor´te-se | kur´te-se |
| **Crocodile** | krok´o-dil | krok´o-dile |
| **Cupola** | ku´po-lo | ku´po-la |
| **Cutlass** | kut´lash | kut´las |
| **Camelopard** | camel-leppard | camel-opard |
| **Celery** | salary | celery |
| **Chapped** | chopped | chapped |
| **Character** | charac´-ter | char-acter |
| **Chariot** | charrot | char-ri-ot |
| **Chastisement** | chas-*tize*´-ment | chas´-tis-ment |
| **China-ware** | ch*a*ney-ware | ch*i*na-ware |
| **Close** | clost | cl*o*se |
| **Clothes** | cloze | clothes |
| **Compromise** | com-promise | com-pro-m*i*se |
| **Courier** | currier | coorier |
| **Cover** | kiver | cover |
| **Covetous** | cov-e-*tus* | cov-e-*chus* |
| **Cucumber** | *cow*-cumber | *cu*-cumber |
| **Curiosity** | cur*o*sity | cu-re-os-e-ty |
| **Chaos** | ka-*o*se | ka-oss |
| **Chasm** | shasm | kasm |
| **Civilization** | civil-*i*-zation | civ-e-le-za-shun |
| **Conduit** | con-du-it | kun´-dit |
| **Cresses** | cr*ee*ses | cress-es |
| **Cushion** | coosh-*in* | coosh -un |

D.

| | | |
|---|---|---|
| **Deaf** | deef | def |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| Decisive | de-sis´iv | de-si´siv |
| Depot | de´pot | de´po |
| Docile | do´sile | dos´sil |
| Dost | dost | dust |
| Does | dooz | duz |
| Drain | dreen | drane |
| Drowned | dround´ed | dround |
| Different | dif´runt | dif´fur-ent |
| Daughter | dar´tur | daw´tur |
| Dandruff | dan´dur | dan´druf |
| Depth | deb*th* | dep*th* |
| Delicate | dil´e-kit | del´e-kate |
| Decrepit | de-krip´id | de-krep´it |
| Doing | doo´in | doo´ing |
| Drop | drap | drop |
| Drover | drov´yur | dro´vur |
| Drawer | draw | draw´ur |
| Debut | de-but´ | de-bu´ |
| Diamond | di´mund | di´a-mund |
| District | dees´trikt | dis´trikt |
| Daunt | dant | daunt |
| Destine | des´tine | des´tin |
| Diffuse | dif-fuze´ | dif-fuse´ |
| Discipline | dis´se-pline | dis´se-plin |
| Disputant | dis-pu´tant | dis´pu-tant |
| Ductile | duk´tile | duk´til |
| Duodecimo | du-dis´e-mo | du-o-des´emo |
| Dromedary | drom´e-da-re | drum´e-da-re |
| Design | des-ine | de-zine |
| Despicable | dis-picable | des´pi-ca-bl |
| Dictionary | dixonary | dic-shun-ary |
| Draw | drawr | draw |
| Drought | drou*gth* | drout |
| Dubious | du-ber-us | du-be-us |
| Despatch | dis-patch | de-spatch |
| Diploma | dip-lo-ma | de-plo-ma |
| Diplomacy | dip-lo-macy | de-plo-macy |
| Direct | di´rect | di-rect´ |
| Dome | doom | dome |
| Duke | dook | duke |

## E.

| | | |
|---|---|---|
| Edge | aje | edge |
| Either | i´thur | e´thur |
| English | eng´lish | ing´glish |
| Era | e´re | e´ra |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Ere** | ere | are |
| **Enemy** | in´ne-me | en´ne-me |
| **Emaciate** | e-ma´shate | e-ma´she-ate |
| **Extempore** | exs-tem´pore | exs-tem´po-re |
| **Etiquette** | et´e-kwet | et´e-ket |
| **European** | yu-ro´pe-an | yu-ro-pe´an |
| **Enunciate** | e-nun´shate | e-nun´she-ate |
| **Edgewise** | aj´waz | ej´wize |
| **Endwise** | end´waz | end´wize |
| **Enervate** | en´ur-vate | e-nur´vate |
| **Engine** | in´jine | en´jin |
| **Enjoin** | in-jine´ | en-join´ |
| **Envelope** | en´ve-lope | en-vel´up |
| **Esquire** | e´skwire | es-kwire´ |
| **Education** | eddication | ed-ju-ka-shun |
| **Errand** | arrand | er-rand |
| **Exaggerate** | ex-ag-er-ate | ex-ad-jir-ate |
| **Edict** | ed-ickt | e-dickt |
| **Egotism** | e-gǫ-tism | eg-o-tizm |
| **Epistle** | e-pis-tle | e-pis-el |
| **Epitome** | ep-i-tome | e-pit-o-me |
| **Epoch** | e-pock | ep-ock |
| **Equinox** | ek´we-nox | e´kwe-nox |
| **Every** | ev-ry | ev-er-ey |

F.

| | | |
|---|---|---|
| **Fearful** | fer´ful | feer´ful |
| **Fiend** | fend | feend |
| **First** | fust | furst |
| **Foliage** | foil´age | fo´le-aje |
| **Fortune** | for´tin | for´tshune |
| **Fragrance** | frag´ranse | fra´granse |
| **Futile** | fu´tile | fu´til |
| **Future** | fu´tur | fu´tshure |
| **Fellow** | fel´lur | fel´low |
| **Follow** | fol´lur | fol´low |
| **Forward** | for´rud | for´ward |
| **Family** | fam´le | fam´e-le |
| **Faucet** | fas´sit | faw´set |
| **Forget** | fur-git | for-get |
| **Feminine** | fem´e-nine | fem´e-nin |
| **Frustrate** | flus´trate | frus´trate |
| **February** | feb´u-wa-re | feb´ru-a-re |
| **Far** | fur | far |
| **Further** | fur´der | fur´thur |
| **Falchion** | fal´tshe-un | fol´shun |
| **Fanatic** | fan´a-tik | fa-nat´ik |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Felloe** | fel'le | fel'lo |
| **Ferocious** | fe-rosh'us | fe-ro'shus |
| **Fertile** | fer'tile | fer til |
| **Flatwise** | flat'waze | flat'wise |
| **Forger** | for'jur-ur | fore'jur |
| **Fragile** | fra'jile | fraj'il |
| **Franchise** | fran'tshize | fran'tshiz |
| **Finance** | fi'-nance | fe'-nance |
| **Foundling** | fond ling | found'-ling |

G.

| | | |
|---|---|---|
| **Gather** | geth'ur | gath'ur |
| **Get** | git | get |
| **Girth** | gurt | ger*th* |
| **Going** | gwine | go'ing |
| **Gold** | goold | gold |
| **Grudge** | be-gretsh' | grudge |
| **General** | gin'ral | gen'er-al |
| **Gifts** | gifs | gifts |
| **Gimlet** | gimb'lit | gim'let |
| **Girl** | gal | gerl |
| **Genuine** | jin'u-ine | jen'u-in |
| **Guardian** | gar-deen' | gyar'de-an |
| **Gown** | gound | goun |
| **Gave** | gin, or give | gave |
| **Galled** | gald'ed | gald |
| **Generally** | jin'ral-le | jen'er-al-le |
| **Gymnastic** | gim-nas'tik | jim-nas'tik |
| **Gallows** | gal'loz | gal'lus |
| **Grandeur** | gran'dur | gran'jur |
| **Galveston** | galves'-ton | gal'-ves-ton |
| **Genealogy** | gen'-e-ology | ge-ne-ology |
| **Geography** | gog-graphy' | ge-og-ra-phy |
| **Geometry** | jom-e-try | ge-om-e-try |
| **Government** | gover'-ment | govern-ment |
| **Grindstone** | grin'-stone | grind'-stone |
| **Garden** | gar'-den | gar'dn |
| **Galleon** | gal-*loon* | gal'-le-on |

**Gallant**, meaning brave, gay, etc., should have the accent on the first syllable, gal'-lant; but gallant, meaning polite to ladies, or as a substantive, meaning a wooer, should have the accent on the second syllable, gal- *lant*.

H.

Many English people, especially Londoners, omit the aspirate not only at the beginning of words, but after the *w*, as in *wh*ere; and in the middle of words, as in fore*h*ead, which they mispro-

nounce for-*ed*, instead of for'-*h*ed; in ab*h*or, be*h*old, ex-*h*aust, in-*h*abit, un-*h*orse, etc. The *h* should always be sounded, except in the following words, where it is silent:—Heir, heiress, heir-loom; herb, herbage; honest, honesty, honestly; honor, honorable, honorably; hospital; hostler; hour, hourly; humor, humorist, humorously; and their other derivatives. The *h* in *h*umble was formerly silent, but it is now aspirated. Humble-pie is an incorrect spelling of umble-pie, a pie made of umbles, a plural noun, meaning a deer's entrails.

Many persons not only omit the aspirate where it should be sounded, but aspirate where there is no *h*, or where it should be silent, as *h*end for end, etc.

Be careful not to mistake loudness for aspiration. Hold up the finger a few inches from your mouth, and pronounce any word containing the *h*. If you aspirate you will feel the breath against the finger, but not if you merely speak loud.

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Has** | hez | haz |
| **Have** | hev | hav |
| **Hearth** | hur*th*, or ha*th* | harth |
| **Hoist** | histe | hoist |
| **Home** | hum | home |
| **Homely** | hum'le | home'le |
| **Hoof** | huf | hoof |
| **Humble** | hum'bl | um'bl |
| **Horse** | hoss | horse |
| **Hollow** | hol'lur | hol'lo |
| **Height** | hate, or hi*th* | hite |
| **Heard** | heerd | hurd |
| **Husband** | huz'bun | huz'band |
| **Hinder** | hen'dur | hin'dur |
| **Hers** | hurn | hers |
| **Hindrance** | hen'drans | hin'drans |
| **Humorous** | yu'mur-sum | yu'mur-us |
| **Hallelujah** | hal-le-lu'ja | hal-la-loo'ya |
| **Harsh** | hash | harsh |
| **Hurricane** | har're-kane | hur're-kane |
| **Haunt** | haunt | hant |
| **Hostile** | hos'tile | hos'til |
| **Hypocrisy** | hi-pok're-se | he-pok're-se |
| **Heinous** | hee'-nous | hay'-nous |
| **Horizon** | hore'-zon | ho-ri'-zn |
| **Hundred** | hun'-derd | hun'-dred |
| **Hover** | ho*v*'-er | hu*v*'-er |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| Highland | hee'-land | hi'-land |
| Hymenial | hy-me-ni-al | hy-men-e'-al |
| Hyperbole | hy'-per-bole | hy-per'-bo-le |
| | I. | |
| Indian | in'jun | in'de-an |
| Instead | in-stid' | in-sted' |
| India | in'je | in'de-a |
| Impudence | im'pur-duns | im'pu-dens |
| Irregular | ir-reg'lur | ir-reg'u-lar |
| Israel | iz'rul | iz'ra-el |
| Illustrious | il-lus'trus | il-lus'tre-us |
| Invariable | in-va'ra-ble | in-va're-a-ble |
| Idea | i-de' or i-deer | i-de'a |
| Ingredient | in-gre de-ant | in-gre'jent |
| Indemnify | on-dem ne-fi | in-dem'ne-fi |
| Iron | i'run | i'urn |
| Impetus | im-pe'tus | im'pe-tus |
| Interval | in'tur-vale | in'tur-val |
| Intestine | in-tes'tine | in-tes'tin |
| Inventory | in-vent'tur-re | in'ven-tur-re |
| Industry | in-dus'-try | in'-dus-try |
| Invalid | (a sick person) | in-va-leed' |
| Invalid | (of no force) | in-val'-id |
| Isolate | i'-zo-late | is'-o-late |
| | J. | |
| Jesting | jeest in | jest'ing |
| Join | jine | join |
| Joist | jise | joist |
| Jaundice | jan'durs | jan'dis |
| January | jin'ur-wa-re | jan'nu-ar-e |
| Joint | jint | joint |
| Joiner | jin'ur | join'ur |
| Jaunt | jant | jant |
| Jugular | jug'ur-lur | ju'gu-lar |
| Juvenile | ju've-nile | ju've-nil |
| Jalap | jolop | jal-ap |
| | K. | |
| Kettle | kit tl | ket'tl |
| Knew | no'd | nu |
| Kept | kep | kept |
| Keg | kag | keg |
| Kiln | kil'n | kil |
| Kind | key-'ind | kind |

Knowledge should be pronounced *no"-edge*, not *no'*-ledge. It is a false idea, especially prevalent among the clergy and classical

scholars, that a different accentuation to that used in ordinary conversation, and an over-distinctness of articulation, as the pro nouncing *ë-vil* for *e'vl*, *dev-il* for *dev'vl*, etc., should be adopted in solemn speech and Scripture reading, in order to impart impressive ness. True impressiveness depends upon the tone, and not upon the mere pronunciation. To be truly impressive you must be natural, expressive, and in earnest.

L.

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Lecture** | lek´tur | lek´tshure |
| **Leisure** | lezh´ur | le´zhure |
| **Lever** | lev´ur | le´vur |
| **Lid** | led | lid |
| **Little** | lee´tl | lit´tl |
| **Learn** | larn | lern |
| **Lover** | luv´yur | luv´ur |
| **Leather** | luth´ur | leth´ur |
| **Legate** | le´gate | leg´ate |
| **Lengthwise** | length´waze | length´wize |
| **Lenient** | len´e-ent | le´ne-ent |
| **Library** | lib´re | li´bra-re |
| **Lilac** | lay´-lock | li´-lack |
| **Lutheran** | lu-the-re-an | lu-the-ran |
| **Leave** | leaf | leave |
| **Legend** | le´gend | lej´end |

M.

| | | |
|---|---|---|
| **Maintain** | mane-tane | men-tane´ |
| **Massacre** | mas´a-cre | mas´sa-kur |
| **Museum** | mu´ze-um | mu-ze´um |
| **Mile** | mild | mile |
| **Mountain** | moun´tn | moun´tin |
| **Meadow** | med´dur | med´do |
| **Memory** | mem´re | mem´mur-re |
| **Mixture** | mix´tur | miks´tshur |
| **Muskmelon** | mush´milyun | musk´mel-un |
| **Mulatto** | mu-lat´tur | mu-lat´to |
| **Mandarin** | man´dur-in | man-da-reen´ |
| **Mechanism** | me´kan-izm | mek´kan-izm |
| **Messuage** | mes´su-idge | mes´swadge |
| **Miracle** | mer´a-cl | mir´a-cl |
| **Marbles** | mar´vls | mar´bls |
| **Medicine** | med´-cine | med-i-cine |
| **Mineralogy** | min-er-*o*logy | min-er-al-ogy |
| **Monument** | mon-i-ment | mon-u-ment |
| **Mosquitoes** | mos-quters | mos-kee-toes |
| **Many** | man-ny | men-ney |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Marchioness** | march'-yun-ness | mar'-shun-ess |
| **Mattress** | mat'-tr*a*ss | mat'-tress |
| **Matron** | mat'-ron | m*a*'-trun |
| **Mischievous** | mis-ch*ee*v'us | mis'-chiv-us |

N.

| | | |
|---|---|---|
| **Nature** | na'tur | na'tshure |
| **Neither** | ni'*th*ur | ne'*th*ur |
| **Nominative** | nom'e-tiv | nom'e-na-tiv |
| **National** | na'shun-al | nash'un-al |
| **Narrow** | nar'rur | nar'ro |
| **Next** | nex | next |
| **Natural** | nat'ral | nat'tshu-ral |
| **Negro** | nig'gur | ne'gro |
| **Nonplus** | nun'plush | non'plus |
| **Nowise** | no'waze | no'wize |
| **Nape** | nap | nape |
| **Nothing** | no*th*'in | nu*th*'ing |
| **Nephew** | nev-vy or nef-u | nev-u |
| **Norwich** | nor-wich | nor-ridge |
| **Neighborhood** | nay'-bur-wood | nay-bur-hood |

O.

| | | |
|---|---|---|
| **Oblige** | o-bleeje' | o-blije |
| **Oblique** | o-bleek' | ob-like' |
| **Oil** | ile | oil |
| **Only** | on'le or un'le | one'le |
| **Ordinary** | or'na-re | or'de-na-re |
| **Octavo** | ok-ta'vo | ok-ta'vo |
| **Onions** | ing'uns | un'yuns |
| **Otherwise** | uth'ur-waze | uth'ur-wize |
| **Offence** | o-fence | of-fence |
| **Odorous** | od'-ur-us | o-dur-us |
| **Of** | of | ov |
| **Off** | awf | of |
| **Omniscience** | om-ni-sci-ence | om-nish'-ense |
| **Orchestra** | or-ches-tra | or-kes'-tra |
| **Organization** | or-ga-*ni*-za-shun | or-gan-e-za'-shun |
| **Ostrich** | os-tridge | os'-trich |

P.

| | | |
|---|---|---|
| **Parent** | pa'rent | par'ent |
| **Partner** | pard'nur | part'nur |
| **Pasture** | pas'tur | pas'tshure |
| **Patron** | pat'run | pa'trun |
| **Pincers** | pinsh'urs | pin'surs |
| **Pith** | pet*h* | pi*th* |
| **Point** | pint | point |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Precept** | pres´sept | pre´sept |
| **Preface** | pre´fase | pref´fas |
| **Prelude** | pre´lude | prel´ude |
| **Process** | pro´ses | pros´ses |
| **Product** | pro´dukt | prod´ukt |
| **Profile** | pro´file | pro´feel |
| **Pother** | b*oth*´ur | puth´ur |
| **Poison** | pi´z'n | poe´z'n |
| **Plaintiff** | plan´tif | plane´tif |
| **Pedestrian** | pe-des´trin | pe-des´tre-an |
| **Particular** | pu-tik´lur | par-tik´u-lur |
| **Partiality** | par-shal´e-te | par-she-al´e-te |
| **Patriot** | pat´re-ut | pa´tre-ut |
| **Philosophy** | fi-los´o-fe | fe-los´o-fe |
| **Plagiarism** | pla´ga-rizm | pla´ja-rizm |
| **Pretty** | put´te | pret´te |
| **Pristine** | pris´tine | pris´tin |
| **Partridge** | pat´ridge | par´tridje |
| **Pageant** | p*a*-jant | paj´ant |
| **Partisan** | par-te-*san* | par´-te-zan |
| **Patent** | *pa*´-tent | pat´-ent |
| **Physiognomy** | phys-e-*o*n-omy | phys-e-og-no-my |
| **Poet** | po-*it* | po-et |
| **Poignant** | p*oig*´-nant | *poy*´-nant |
| **Pomegranate** | *pum*-gran´-*it* | pome-gran´-ate |
| **Precedent** | pre-ce´-dent | pres´-e-dent |
| **Predecessor** | *pre*´-de-ees-sur | pred-e-ces´-sur |
| **Princess** | prin-cess´ | prin´-cess |
| **Progress** | (as a verb) | pro-*gress* |
| **Progress** | (as a substantive) | prog´-ress |
| **Prologue** | pro´-loge | prol´-og |
| **Pronunciation** | pro-nun-*she*-a-shun | pro-nun-ce-a´-shun |
| **Pantomime** | pan-to-mine | pan-to-mime |
| **Parsley** | pasley | par-sley |
| **Perhaps** | praps, or prehaps | per-haps |
| **Phaeton** | fe´-ton | fa´-e-ton |
| **Piano** | pe-an-ner | pe-an-o |
| **Pillow** | piller | pil-low |
| **Promiscuous** | pro-mis-cus | pro-mis-cu-ous |

Q.

| | | |
|---|---|---|
| **Quoit** | kwate | kwoit |
| **Quarrel** | kworl | kwor´ril |
| **Quantity** | kwan´te-te | kwon´te-te |
| **Quandary** | kwon´du-re | kwon-da´re |
| **Quorum** | ko´rum | kwo´rum |
| **Quench** | kwinsh | kwensh |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Quay** | kwa | ke |
| **Quash** | skwosh | kwosh |
| **Quadrille** | *kuod*-ril | ka-dril′ |
| **Query** | kuir′-y | kwe′-ry |
| **Quoth** | kwoth | kwuth |

## R

has two sounds—the strong vibratory *r*, heard at the beginning of words and of syllables, as in *rage, error;* and the smooth *r*, which is heard at the termination of words, or when it is succeeded by a consonant. The first is formed by jarring the tongue against the roof of the mouth, near the fore teeth; and the second, by a vibration of the lower part of the tongue, near the root, against the inward region of the palate. In some parts of Ireland, the *r* before the final consonant, as in *card*, is pronounced with the force of the commencing *r*, accompanied by a strong aspiration at the beginning of the letter; whereas in England, and particularly in London, it is entirely sunk, and the word sounds as if written *caad*. The Scotch frequently give it with more roughness and clearness at the termination than at the beginning. But the sound which they give at the commencement is not the English terminational sound; it is a negligent and imperfect quivering of the first English *r*. In such words as *thorn, worm*, many of the Scotch, as well as the Irish, sound the *rn* as if they formed a separate syllable. Many persons, from indolence or inattention, instead of quivering the tip of the tongue in this letter, give it a burring sound by quivering the epiglottis. In looking into the mouth of these persons, on desiring them to sound *r*, the tongue is seen thrust behind the lower teeth; by causing them to lift up the tongue, balance it in the mouth, and then breathe strongly, they will frequently at once give the true sound of the letter. The difficulty afterwards lies in teaching the terminational *r*, which they will for a time give with the old sound; in such cases they should use the first *r*, though it is harsh, and soften it gradually.

| | | |
|---|---|---|
| **Reptile** | rep′tile | rep′til |
| **Rind** | rine | rind |
| **Rinse** | rense | rinse |
| **Rosin** | roz′um | roz′in |
| **Routine** | rou′tene | roo-teen′ |
| **Rapture** | rap′tur | rap′tshure |
| **Record** | re-kord′ | rek′ord |
| **Really** | ra′le | re′al-le |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Rose** | riz | rose |
| **Reaped** | rep | reep't |
| **Radishes** | red'dish-iz | rad'dish-iz |
| **Roof** | ruf | roof |
| **Radiance** | rad'e-anse | ra'de-anse |
| **Ratio** | ra'sho | ra'she-o |
| **Rational** | ra'shin-al | rash'un-al |
| **Rivet** | rib'it | riv'it |
| **Rather** | ru*th*'ur | ra*th*'ur |
| **Rheumatism** | roo'ma-tiz | roo'ma-tizm |
| **Recognize** | re-kog'nize | rek'kog-nize |
| **Reparable** | re-par'a-bl | rep'par-a-bl |
| **Raillery** | rail'-ery | ral'ler-ey |
| **Release** | re'-lease | re-lease' |
| **Resort** | re-*s*ort | re-zort |
| **Resound** | re-*s*ound | re-zound |
| **Respite** | res'-p*i*te | res'-pit |
| **Revolt** | re-volt | re-volt |
| **Route** | rout | root |
| **Regular** | reg'-lar | reg'-u-lar |
| **Remunerate** | re-num-er-ate | re-mu-ner-ate |
| **Ridicule** | *red*-i-cule | rid-i-cule |
| | S. | |
| **Scarce** | skass | skarse |
| **Schedule** | sked'jule | sed'jule |
| **Since** | sense | sinse |
| **Slothful** | slaw*th*'ful | slo*th*' ful |
| **Soot** | sut | soot |
| **Spoil** | spile | spoil |
| **Steelyard** | stil'yurdz | steel'yard |
| **Stamp** | stomp | stamp |
| **Stint** | stent | stint (task) |
| **Sword** | sword | sord |
| **Synod** | si'nod | sin'ud |
| **Salad** | sal'lit | sal'lad |
| **Spirits** | sper'itz | spir'itz |
| **Subject** | sub'jik | sub'jekt |
| **Soldier** | so'jur | sol'jur |
| **Swallow** | swol'lur | swol'lo |
| **Search** | sartsh | sertsh |
| **Slept** | slep | slept |
| **Sassafras** | sas'sa-fax | sas'sa-fras |
| **Scatter** | sket'tur | skat'tur |
| **Skirmish** | skur'midje | sker'mish |
| **Saucy** | sas'se | saw'se |
| **Saucer** | sas'sur | saw'sur |
| **Seminary** | sim'e-na-re | sem'e-na-re |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Seldom** | sil´dum | sel´dum |
| **Scared** | skart | skaird |
| **Stereotype** | ster´o-tipe | ste´re-o-tipe |
| **Sorrow** | sor´rur | sor´ro |
| **Saffron** | saf´frun | saf´furn |
| **Sapphire** | saf´fire | saf´fir |
| **Singular** | sing´glar | sing´gu- |
| **Steady** | stid´de | sted´de |
| **Surcingle** | si´sing-gl | sur´sing-gl |
| **Sphere** | spere | sfere |
| **Stupendous** | stu-pend´u-us | stu-pend´us |
| **Suavity** | su-av´e-te | swav´e-te |
| **Saturday** | sat´a-de | sat´ur-da |
| **Sacrament** | *sa*´-cra-ment | sac´-ra-ment |
| **Satan** | sat´-an | sa´-tan |
| **Satanic** | sa´-tan-ic | sat´-an-ic |
| **Satire** | sa´-*tire* | sat´-er |
| **Saunter** | sawn-ter | san´-ter |
| **Sausage** | sos-sidge, or *sas*-sage | saw´-sage |
| **Scenic** | scen´ic | sce-nick |
| **Shone** | *sh*one, or sh*n* | shon |
| **Solecism** | *so*´-le-cizm | sol´-e-cizm |
| **Specious** | *spesh*´-us | spe´-shus |
| **Stomachic** | stum*atch*ic | stum-ak´-ik |
| **Strove** | struv | *str*ove |
| **Suggest** | su*j*-gest | sud-gest |
| **Saith** | seth | *s*aith |
| **Saw** | sawr | saw |
| **Sepulchre** | sep´-ul-kr*ee* | sep´-ul-ker |
| **Shocking** | shaw-king | shock-ing |
| **Subpœna** | soo-pe-na | sub-pee-na |
| **Subtraction** | sub-strak-shun | sub-trak-shun |

T.

| | | |
|---|---|---|
| **Tour** | tour | toor |
| **Treble** | trib´bl | treb´bl |
| **Towards** | tu-wardz´ | to´urdz |
| **Trophy** | trof´fe | tro´fe |
| **Tuesday** | tshuz´de | tuze´de |
| **Turnips** | turn´ups | turn´ips |
| **Tassel** | tos´sl | tas´sel |
| **Thousand** | thou´z'n | thou´zand |
| **Touch** | tetsh | tutsh |
| **Terrible** | tur´re-bl | ter´re-bl |
| **To-morrow** | to-mor´rur | to-mor´ro |
| **Tobacco** | to-bak´ur | to-bak´ko |
| **Tomatoes** | to-ma´te-siz | to-ma´toz |
| **Trivial** | triv´e-al | triv´yal |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Tyranny** | ti´ran-e | tir´ran-ne |
| **Teat** | tit | *teet* |
| **Temperament** | tem-per´-a-ment | tem´-per-a-ment |
| **Tenure** | te´nure | ten´-ure |
| **Tenable** | te´-na-bl | ten´-a-bl |
| **Tenet** | te´-nit | ten´-et |
| **Than** | thun | than |
| **Tremor** | tre´-mor | trem´-or |
| **Tapestry** | ta´-pes-try | tap´-es-try |
| **Theatre** | thay´-ter | the´-a-ter |
| **Trestle** | trus´-sel | tres-tle |

Therefore should be pronounced *ther'-fore*, not *thare-for*, but *there* should be pronounced *thare* in the other compounds, therefrom, there-in, there-in-to (*too*), there-of, etc., all of which should have the accent on the last syllable, except there-un-der.

To (particle or preposition) is seldom articulated as it should be. To be is commonly pronounced *tub*be; to think, *ter* think; go to him, go *ter* him. *To* should always be clearly, but not pedantically, articulated. It should be pronounced like *two*, in counting one, *two*, three, fast.

Too, the adverb, should be pronounced like *two*, in counting one—*two*—three, slowly.

U.

| | | |
|---|---|---|
| **Umbrella** | um-bur-rel´lur | um-brel´la |
| **Unknown** | un-be-none´ | un-none´ |
| **Unawares** | on-a-warz´ | un-a-warz´ |
| **Unerring** | un-ur´ing | un-er´ring |
| **Ungenial** | un-jeen´yul | un-je´ne-al |

V.

Many English persons, particularly natives of London, often substitute the sound of *w* for *v*, and *v* for *w*. To cure this, often repeat a few words beginning with or containing the *v*, and bite the under lip while sounding the *v*, until the letter be well pronounced; then repeat words beginning with or containing the *w*, which must be pronounced by a pouting out of the lips, without suffering them to touch the teeth. *V* is formed by pressing the lower part of the upper teeth against the inside of the lower lip.

| | | |
|---|---|---|
| **Verdure** | vur´dur | ver´jur |
| **Volume** | vol´lum | vol´yume |
| **Vendue** | van´du | ven-due´ |
| **Voyage** | vidje | voe´adje |

| Correctly spelled. | Incorrectly pronounced. | Correctly pronounced. |
|---|---|---|
| **Verbatim** | ver-bat'im | ver-ba'tim |
| **Volatile** | vol'a-tile | vol'a-til |
| **Vase** | vawze | vaze |
| **Vivacious** | viv'-a-shus | vi-va'-shus |
| **Venison** | ven'-son | ven'-i-son |
| | W. | |
| **Was** | wuz | woz |
| **Weary** | wary | we're |
| **Were** | ware | wer |
| **Wont** | wont | wunt |
| **Wrath** | rath | rawth |
| **Waistcoat** | wes'-cutt | waist-coat |
| **Willow** | wil'-ler | wil'-low |
| **Worcester** | wor-ces-ter | wooster |
| | Y. | |
| **Yacht** | yat | yot |
| **Yellow** | yul-low, or yal'ler | yel'-low |
| | Z. | |
| **Zebra** | zeb'ra | ze'-bra |
| **Zenith** | ze'-nith | zen'-ith |
| **Zodiac** | zo-di-ac | zo-de-ak |
| **Zoology** | zoo-lo-gy | zo-ol-o-gy |

**Words ending in ence and ance.**—It is important to give the pure vowel sounds of short *a* and short *e* in words ending in *ance* and *ence;* examples, *maintenance, surveillance, sustenance, confidence, Providence,* etc. A common fault in the United States is to blur the vowel, and give it the half-sound of an indistinct short *u*, "maintenunce," surveillunce," "sustenunce," "confidunce," "Providunce." The same remark is applicable to adjectives ending in *ant* and *ent,* as "providunt," "confidunt," instead of *provident, confident.* The cultivated speaker may always be known by his giving attention to the accurate pronunciation of these final syllables.

**Present participles, and words ending in ing.**—The habit of slurring the terminal *g* in present participles and other words ending in *ing,* should be carefully guarded against. Say "going," not "goin'." "He is standing there," not "he is standin'." "Good-morning," not "good-mornin'." All the present participles, and many other words ending in *ing,* come within the range of this observation.

**Words ending in a.**—The proper pronunciation of the last syllable in all words ending in *a*, is as the *a* in *father*. Two errors are of frequent occurrence. One is to drawl out the *a* as if it had an *r* after it. In this case the *r* is sounded with more force than is commonly given to it in words that properly end in *r*. Sometimes the *a* is changed, and the syllable pronounced as if it ended in *er*. The other error is to pronounce the syllable as if it ended in *ie*, or *y*. "Emma" is pronounced "Emmy," "Sarah," "Sary." The *a*, with the power of the broad *a* in *father*, should be pronounced very quickly.

**Words ending in ar and er.**—An error of the opposite character is committed in the case of words ending in *ar* and *er*. The *r* is often cut off, and a broad sound it given to the *a*, stronger than in *father*, and often as strong as the *a* in *water*. "Waitah," "altah," "mistah," "watah," for "waiter," "altar," "mister," "water." The *r* should always be heard in such words.

**Cork, fork, curtain, morsel.**—Be careful to sound the *r* Do not say "cawk," "fawk," "cu'tain," "mo'sel."

**Car, card, kind,** and other words beginning with *c* or *k*, as well as many beginning with *g*, are often given an *e* or *y* sound that does not belong to them. As "kyar," "kyard," "kyind" "gyard," etc., for *car*, *card*, *kind*, *guard*, etc.

**Harriet, superior, interior, etc.**—In these words, and in others in which *r* is followed by a *y* sound, we sometimes perceive that it is omitted, hearing such pronunciation as "ha'yet," "supe'-yor," "inte'yor," etc. Be careful to sound the *r*.

While *r* should always be sounded when it occurs, it is not trilled or rolled in the English as it is in other languages, or as the Irish roll it in their brogue. "Warm" should no more be pronounced "warrum" than "wawm." "Stormy" no more "storrumy," than "stawmy."

**Words and syllables containing ow and ou.**—Avoid the sharp nasal pronunciation of "how," "cow," "confound," and other words containing the *ow* sound; as "heow," or "h'yow," "keow," "confeound." The sound of this diphthong should be formed deep in the chest, and should be pure and rotund.

**U in tune, mute, etc.**—The *u* in *tune*, *mute*, etc., has a peculiar sound, which cannot be represented by any other letter, or by any combination of letters. It must be heard. Some persons err by sounding it like *oo*, saying "toon," "dook," "dooty," for "tune,"

"duke," "duty." Others make it excessively sharp, as if it had a *dj* sound before it. They say "tjewn," "djewk," "djewty." The correct sound must be heard, carefully observed, and copied.

**Do, to,** have also a peculiar sound, which cannot be represented. It is alike distinct from the sound of "too," and from that of "dew." This sound also must be heard, then followed.

**Boot, shoot.**—Do not pronounce them "bute," "shute."

**Butcher.**—Another difficult *u* sound is that in *butcher*. It occurs in but few, if any, other words. Some pronounce it "boocher;" that is a word of very different sound. The *u* is formed deep in the chest, and is made very short.

**Either, neither.**—A fashion sprung up in England a few years ago, of giving to *ei* in these words the long sound of *i*, as in *eye*. It has been extensively copied in the United States by clergymen and others who pride themselves on precision in speech. The proper pronunciation is with *ei* as *e* long, as in *receive, grief*. That pronunciation is as old as the words; it is sanctioned by all lexicographers, and by the critics who have written upon the subject since the innovation came into notice.

**Greek, Latin, and Scripture Proper Names.**—There are no difficulties as to the pronunciation of these, since they are, most of them, so much used in modern speech, as to have long ago adapted themselves to the ordinary rules of English pronunciation. The foregoing rules, therefore, when applicable to this class of words, are to have full force; and the only particular which requires notice here is as to their division into syllables. It is evident that unless we divide words properly we must mar the pronunciation. Thus Ca-to may, by improper division, be pronounced Cat-o; and a similar error may convert Mi-das into Mid-as, So-lon into Sol-on, and so on, to the destruction of all that is sacred in the mechanism of ancient literature. Reference to "Webster" will give the accent of all classic names, and likewise the proper mode of dividing them for purposes of pronunciation. Usually the words have a full sound. The accent generally falls late in the word, and i, e, and o, especially, are used as long vowels.

The diphthongs æ and œ, which are found only in classic words, are to have the sound of *e*, as described in connection with the digraphs; *ai* is to be sounded as our alphabetical *a*, and *ei* unlike

the sound of it in ordinary English *e*, must, in classic words, have the sound of *i*.

*C* and *g*, before *e*, *i*, *y*, *æ*, *œ*, must have their soft sounds, like *s* and *j*; but *ch* in Greek words is always sounded *k*, and in Scripture names also, though with one or two exceptions. Ph has the same sound as in English, namely, f; while *cn*, *ct*, *gn*, *mn*, *pn*, *ps*, *pt*, *phth*, *tm*, and other similar combinations, when they occur at the commencement of words, drop their first letter in the pronunciation.

In all classic names the seat of accent is the important matter; this, with a few exceptions, is always on the last syllable but one, or on the last but two.

The termination *es*, in Greek proper names, should have a distinct utterance, and by giving it this, the accent will indicate itself to both ear and tongue. For instance, we once heard an incipient orator pronounce Hippocrates, Hip´-po-crah´-tes, and Socrates, So-kraytes. Had the learned gentleman ever struggled for a scholarship, or passed through the tortures of matriculation, he would have known that *es* was not to be so trifled with, but would have given the termination its importance, thus—Hip-pock-ra-tees Sock-ra-tees. I should not have called attention to this subject, from a belief that the veriest tyro in book knowledge would be well aware of the necessity of giving *es* its due in classic proper names, had I not observed the deficiency, even in public speakers. The following instances will suffice to place the reader on his guard, and serve as keys to the pronunciation of names having this termination—*Pericles*, Perry-klees; *Socrates*, Sock´-ra-tees´; *Thucydides*, Thu-sid´-i-dees´; *Praxitiles*, Pracks-it´-i-lees; *Harmonides*, Har-mon´-i-dees´; *Simonides*, Sigh-mon´-i-dees´.

**Foreign Names of Persons and Places.**—Continental languages have an almost uniform alphabet, and the sounds of the vowels are as nearly as possible identical in each separate tongue. A is usually sounded like our a in *ah*, or the second a in *afar*. It has, however, its sound of *a* as in *may*, in all continental languages, but this sound occurs very seldom. E has the sound usually of *a* in *way*, and sometimes a shortened sound, approaching to *er*, made by curling over and pressing the tongue against the lower palate, at the same time breathing outward. The vowel i has almost invariably the sound of *e*; o maintains its English sound of *o*, as in *so*, but has occasionally the sound of *oo*; in Italian it has the dis-

tinct sounds of o as in *so*, and aw in *saw*. The u in French has a delicate sound, the lips being compressed; but in Italian it invariably bears the full sound of *oo;* as, *Luisa*, pronounced Loo-e-zah.

With respect to the consonants, their sound, generally speaking, is the same in all European languages, and little hazard will be incurred by adhering in this respect to English custom. Among the exceptions is *th*, which, on the Continent, is usually sounded as t simply. Thus the French name *Berthollet* is sounded Bare'-tol-lay'. X is often sounded as s, or ce, as in Aix-la-chapelle, Ace'-la-sha-pel. The French nasal sound of n it is sometimes proper to retain, as in Nantes, Nongt, the Simplon, Sang-plong; and sometimes to sink the nasal sound, as in Lyons, Orleans, which two words, and many others, easily receive a purely English pronunciation. It must be confessed that this point is very doubtful, as in the word Ghent, which some call Gongt, and others Guent. Similar remarks apply to Caen (the place in Normandy), which some call Cang, and others Ca-en. The last syllable in *Elbœuf*, has its diphthong sounded with a medium between the English u in buff, and the oo in roof. If the reader will curl up the tongue against the lower palate, and the inner side of the lower front teeth, and breathe outward, this sound may easily be produced. In La Saone, the *ao* have the sound of long o, and so have the the eaux in Bordeaux; while in Bruxelles the x is sounded as *s*.

In Boulogne the concluding sounds are *oin*, with a sound as of y consonant added. With regard to Italian, the c always has the sound of tch before *e* and *i;* and of *k* before a, o, u, or any other letter. G is soft before e and i, and hard before all other letters, except *l* or *m*. J always has the sound of *ii* or *y;* Ajaccio is pronounced *A-yat-che-o*. G before l or n takes the sound of y after it, as in Bentivoglio, *Benti-vo-le-yo*. In Spanish, the y is sounded as in Italian.

Double consonants in Italian must always be *both* sounded: as Machiavelli, Ma-kee-a-vel-ee. When two *gs*, or two *cs* come together, the first always alters the sound of the second: thus Guicciardini is pronounced Gwitch-tche-ar-de-ne. In this beautiful language there are *no* diphthongs. *Every* vowel has its own clear sound, however many may occur together, as calzolaio is cal-tzo-lah-eo. The only approach to a diphthong which this language contains is in *ciò* and *già*.

**French Names.**—In regard to French names, they occur so

often in newspaper reading, they mingle so much in our every-day conversation, that we feel it a duty to offer a few plain instructions on this head.

There are some few sounds so common to the French, that every one not acquainted with the language should at least know the correct utterance of these few. The article *le* (the) is pronounced *ler;* the article *la* (the) *lah;* and the indefinite articles *un* and *une*, as nearly as possible as they are written. The plural *les* is pronounced *lay* before a consonant, and *lays* before a vowel. *De* (of) is pronounced *der;* and *des*, *day* before a consonant and *days* before a vowel.

We have already given, in the above quotations, a sufficiently clear account of the sound of the French vowels. There are, however, a few combinations that require notice. The most important of these is *oi*, as in *moi*, me, pronounced *mwor; mouchoir*, handkerchief, *mouschwor; Vive le Roi*, *Veev ler Rwor*, long live the King.

Another important compound is *au*, which has the sound of *o;* or when united to x, and followed by a vowel, *ose*. The *e* having the sound of our *a*, and *m* and *n* having a nasal twang, causes the pronunciation of some words to be very difficult to a novice; for instance, the M. Druon de L'huys will be pronounced Mongsenur Droo-ong der Lwees. In addressing titled personages the French say Monseigneur, instead of the ordinary Monsieur; the latter is pronounced short *Mongsur*, and so much abbreviated by the tongue and rapidity of utterance, that it is almost impossible to place the sound on paper. The nasal sound must, however, not pass through the nose, but rest in it; and the *g* must not be fully uttered.

In verbs of the third person plural, the *ent* with which they usually terminate is always mute. The consonant *r* must be trilled freely at all times.

In sounding *u* or *eu*, the mouth should be contracted as if for whistling, so as to accomplish a sound between our *u* and *oo*. Thus *Moniteur* is pronounced, as nearly as possible, mon-e-tur, *amateur*, generally pronounced am-a-tew-er, should be am-a-tur. Where *ai* occurs as a compound vowel, i has the sound of our *a*, with a minute dash of *i* in it—so minute, however, as to be but scarcely perceptible.

Terminal consonants are usually mute; as, for instance, *St.*

*Arnaud* is pronounced *Sarntarno—Charngarnier, Shangarneay—Anglais, Aunglay—Canrobert, Kangrobare—Pellissier, Pel-leeee-ee-ay*, etc. When the article le or la is abbreviated, as it always is before a vowel or silent *h*, it combines with the word to which it is attached, thus *l'Emperor*—the emperor—is pronounced *laungp'rer*. French words have no decided accent; and where the reader is at a loss, he must give the accent as if it were an English word.

**Italian Names.**—The Italian language is the most musical of any in the world. It is like the song of the nightingale rendered into syllables. Hence it is easy of utterance: there are no harsh gutturals, such as perplex us in German and Dutch, and which have been humorously described as compounded of a cough, a sneeze, a hiccough, and a husk of barley in the throat. The vowel *a* has two sounds, one of which, at the end of words, is sharp, and the vowel *i* the full sound of the English *e*. The Italian vowels are said to represent the seven notes in music, a, à, e, i, o, ò, u, having the graduations of *do, re, mi, fa, sul, la, ci*. The consonant-compounds are not difficult; zz has the sound of *tz*, and serves to break the syllables, as in *Mazzini*, pronounced Mat-zee-ne; *Pestalozzi*, Pes'-ta-lot-ze. In a general sense, the correct pronunciation of Italian names is very easy, the great point being to give the syllables, vowels, and double consonants their full music and distinctness.

**German Names.**—The pronunciation of German is exceedingly simple. "The rule is," says Mr. Lebahn, "to speak it as it is written, and to write as it is spoken." The sounds are mostly the same as the French, though their uses and combinations vary. The frequent occurrence of the long vowel, as ä, ö, ü, is a striking peculiarity. When ä occurs long, with the dieræsis, its sound is the same as our a in *hay*. Otherwise the sound of *a* in German is broad, like our a in *cart*. The ö, when so made long, has just the same sound as our u in *purse;* hence, Carl Theodor Körner is pronounced Carl Ta-o-dor Kur-ner; th, as before explained, being equivalent to *t* in English. How many thousand blunders have been made over those well-known names, Schiller and Goethe, names, of all others, most easily pronounced when the rule is once made plain. We have heard the first converted into Skiller, and the second into Gurthey, Go-e-the, and Goat. The œ is equivalent to ö, and hence, if we proceed in the same way as in the Körner, we shall have Gur-e-tay, a very slight trill of the *r*

giving it the roughness with which a German utters such words. Schiller is pronounced exactly as it is written, and sch has always a soft sound, exactly the same as in English. Ng has the sound of nk, and *u* generally that of *oo*. The consonant v is equivalent to f, and w to v, while j is used precisely as we use y when a consonant.

The great terror of all Americans, however, is the German ch. This is described by Mr. Smart as being sounded in the same way as the English k. This is an error; for although those who cannot easily accomplish it may fall back on k, yet the German sound of ch has but little resemblance to k in English. Mr. Lebahn proposes not to consider *ch* "as a letter at all, but merely as a loud breathing." However bold this assertion may appear, still, frequent trials have proved its accuracy. "For instance, if you are to pronounce *ich*, pronounce the i with the short sound of *ee*, then push a loud breath through the upper teeth, but be not confounded by the *c* or *ch*, which is not to be considered at all, nor is the breath to be interrupted, but joined to the *ee*, and *ich* will be correctly pronounced." We advise the reader to practice this, as *ch* occurs so frequently in German names and in ordinary newspaper reading, that to slur it over, or halt before the word, has an illiterate appearance, and greatly reduces the pleasure of reading and conversation. The vowel compounds ie and ei are sounded respectively like e in bee, and like y in my. The second vowel of the two has its full English sound, the other remaining mute. The vowel combination eu or aeu has the sound of *oi* in *oil*, and of *a* broad, has a slight sound, but scarcely so much as to give it the character of a syllable. *Au* has always the sound of *ow*.

Remembering these particulars, and the general rule that German is written as it is pronounced, the reader will find no difficulty in pronouncing German words correctly. For instance, the German paper, *Allegemeine Zeitung*, is pronounced Al-ge-mi-ne-zi-toonk; *Vaderland*, Far-ter-lant (d being like English t); *Oesterrissche Correspondens*, Urs-ter-is-sher Kor-res-pon-dens. The *Fremden Blatt* is frequently pronounced *Fremden Blah*, but the correct mode is as it is spelt, Frem-den-blat. *Kreuz Zeitung* must be pronounced Kroiz Zi-toonk.

The following example will show how easy is the acquisition of a correct pronunciation of German:

*Was is das Deutchse Vaterland.* Vos is das Doitcher Fahterlant.

*Wieland*, Véland; *Mosheim*, Mosh-ime; *Gesner*, Gues-ner; *Schwartzenburg*, Schvart'-zen-burg; *Lichtenstein*, Lick'-ten-stine; *Souderhausen*, Sou'-der-how-sen; *Stahl*, Stahl; *Hohenlohe*, Ho'-hen-lo-he; *jager*, yay-ger *Schlegel*, Schlay'-gl; *Kielmeier*, Keel'-mi-er; *Fitchte*, Fick-ta; *Tieck*, Teek; *Möller*, Meel'-ler; *Müller*, Meel'-ler; *Grundtwig*, Grunt'-vig; *Niebuhr*, Neeb'-ur-r; *Gmelin*, G-may'-lin; *Göttingen*, Geat-tin-gen—the *g* in each syllable hard; *Jellachic*, Yel-iak-ik; *Metternich*, Met-ter-nick.

*Dutch Names* come within the scope of what has been said as to German names, though with a few exceptions; *uy* has the sound of *oo*, as *Zuy-der-zee*, pronounced Zoo-der-zee; the consonant t becomes d in sound, and *ch* is the same guttural aspirate as in the German.

Danish, Swedish, and Norwegian come within the rules first laid down.

Examples.—*Schleiermacher*, Schli-er-mah-ker, the last syllable following the rule already given for *ch; Oehlenschläger*, Air-len-schlay-ger, the g in the last syllable hard; *Oersted*, Air-sted; *Langeland*, Lahn-ger-lahnt; *Welt Chronich*, Velt-kron-ik; *Schönbein*, Schean-bine; *Neue Beitrage zu dem Geist in der Natur*, Noi-er Bi-trah-ger zoo dem Gist in der Nah-tur (Contributions to the Soul in Nature).

# COMMON ERRORS

## IN SPEAKING AND WRITING CORRECTED.

---

**Accept of.**—"Please *accept of* this gift." Say "please accept this gift."

**Admit of.**—"His conduct *admits of* no apology." Say "his conduct admits no apology."

**Ascend up.**—"He *ascended up* the mountain." Omit *up*.

**Ask for why.**—"If you ask *for* why I did it." Say "if you ask why I did it."

**At all.**—"Some found fault with me for dealing *at all* with the matter." *At all* adds no force to the remark, and is generally superfluous. In "without any pains at all," it tends to make the expression weaker.

**Before—first.**—"Before I do that I must *first* be secured against loss." Omit *first*.

**Both alike.**—"These two watches are *both alike*." Say "these two watches are alike."

**Both of.**—"Give me *both of* those books." Say "both those books."

**But—however.**—"*But* climate, *however*, always stamps its seal upon the human race." Either *but* or *however* is enough. Both should not be used.

**But that.**—"There can be no doubt *but that* he will succeed." Say "there can be no doubt that he will succeed."

**But what.**—"They will never believe *but what* I have been to blame." *What* is *that which*. *But what* would be *but that which*. The sentence might be supposed to read, "They will never believe but that which I have been to blame." That is nonsense. Say "they will never believe but that I have been to blame."

"They will never believe that I have not been to blame" is preferable.

**Cannot by no means.**—"I *cannot by no means* allow it." Say "I can by no means allow it," or, "I cannot by any means allow it."

**Combine—together.**—"He *combined* them together." Omit *together*.

**Consider of.**—"Let me *consider of* this matter." Omit *of*.

**Continue on.**—"He *continued on* thus." Say "he continued thus." Omit *on* also in such expressions as "he continued on his journey." But it is proper to use *on* in such expressions as "he continued on the road," because he might have continued his journey off the road—that is, through the fields, or by a bye-way.

**Converse together.**—"They *conversed together* for more than an hour. Omit *together*.

**Cover—over.**—"He *covered* it *over*." Say "he covered it."

**Dead corpses.**—"Evil spirits are not occupied about the *dead corpses* of bad men." Omit *dead;* it is implied in *corpses*.

**Descend down.**—"He *descended down* the hill very rapidly." Omit *down*.

**Enter in.**—They told me to *enter in*." Omit *in*.

**Equally as.**—*As* should not be used after *equally*. Say *equally high, equally dear, equally handsome*, etc.; not *equally as high, equally as dear, equally as handsome*.

**Equally as well as.**—"I can do it *equally as well as* he." Omit *equally;* it is implied in the words *as well as*.

**Equally the same.**—"It is *equally the same*." Say "it is the same."

**First of all, last of all.**—"*First of all* he measured the ground." Omit *of all*, saying simply, *first*. "We must do this *last of all*." Omit *of all*. What is first, or what is last, is necessary first of, last of, all.

**From hence, from thence, from whence.**—*Hence* is equivalent to *from here; thence* to *from there; whence* to *from where*. Hence using *from* with either of these words is equivalent to using it twice when it is wanted but once.

**Funeral obsequies.**—"After the *funeral obsequies* were performed." Say *obsequies*. The sense of *funeral* is contained in this word. It would be as proper to speak of a "wedding marriage-ceremony" as of "funeral obsequies."

**Go fetch.**—"*Go fetch* me my riding whip." Say "fetch it," or "go and bring it." *Fetch* has the sense of *go and bring.*

**Have got.**—"John *has got* a sorrel horse." Say "John has a sorrel horse." *Have* signifies to be in possession of anything. *Get* signifies to obtain possession. When one has *got* a thing, he ceases *getting* it, and from that time *has* it.

**If in case.**—"*If in case* he comes, all will be well." Say "if he come;" or "in case he come."

**Issue out.**—"A warrant was *issued out* for his arrest." Say "a warrant was issued."

**It—what.**—"*It* is true *what* he says." Say "what he says is true."

**Latter end.**—"I expect to get through by the *latter end* of the week." Say "by the end of the week." "The *latter end* of that man shall be peace." Say "the end of that man."

**More than one thinks for.**—"It amounts to more than you think *for*." Say "to more than you think," or "than you suppose," or "imagine." Prepositions are often thus unnecessarily tacked upon the ends of sentences.

**Never—whenever.**—"I *never* fail to read *whenever* I can get a book." Say "when I can get a book." One *ever* is enough.

**New beginner.**—Say *beginner.* When one begins anything, he is new at it of course.

**Nobody else.**—"There was *nobody else* but him." Omit *else.*

**Of four years old.**—"A child *of* four years old." Say "a child four years old," or "a child of four years."

**Off of.**—"There were ten yards of the cloth before I cut this piece *off of* it." Say "before I cut this piece off it," or "from it."

**Plunge down.**—"He *plunged down* into the stream." Omit *down.*

**Retreat back.**—"They *retreated back.*" Say "they retreated."

**Return back.**—"After a week's absence he *returned back.*" Say "he returned."

**Rise up.**—"He *rose up* and left the room." Say "he rose;" say also, *raise, lift, hoist;* not *raise up, lift up, hoist up.*

**Sink down.**—"The stone *sunk down* in the water." Omit *down.*

**Some one or other.**—"Some one or another has it." Say "some one has it."

**They both, you both, and we both.**—"*They both* met." Say "they met." "My friend came to see me, and *we both* took a walk." Say "we took a walk."

**Throughout the whole.**—"They sought him *throughout the whole* country." Omit *the whole.* The idea of *the whole* is embodied in *throughout.* "They sought him through the whole country," using *through* instead of *throughout* is also correct.

**Double negatives.**—Two negatives used in the same clause contradict each other, and give the sense of an affirmative. Yet nothing is more common than to use two negatives in this way.

"I did not do *nothing*," or "I didn't do *nothing*," means that "I did something." Say instead, "I did nothing," or "I didn't do anything."

"I have *not* but one." Say "I have but one."

"I *did not* see him but once." Say "I saw him but once," or "only once."

"He is not improving much, I don't think." Say "I don't think he is improving much," or "I think he is not improving much."

"He had not hardly a minute to spare." Omit *not.*

**Above.**—"It is above a month since." Say "more than a month since." Instead of "the above discourse," it is better to say "the preceding discourse," or "the discourse above quoted."

**Aggravate.**—"His indifference aggravates me." Say "displeases me," "irritates me," or "makes me angry." But if the displeasure already exists, his indifference may aggravate it, that is, increase it, or make it heavier.

**Almost with a negative.**—"They pay almost no rent." Say "they pay scarcely any rent," or hardly any rent." The thought of "almost nothing" is ridiculous.

**Alternative.**—"You may take either alternative." Say "you may take the alternative of either." *Alternative* relates to the choice of things, rather than to the things themselves.

**Balance.**—"You may pay me five hundred dollars down, and the *balance* in a year." "I cut part of my hay yesterday, and shall cut the *balance* to-day, if it does not rain." Instead of *balance* say, in both cases, *the rest.*

**Calculate.**—"The failure of the house of —— is *calculated* to cause great excitement in the money market." "Weston's feats have this additional recommendation, that they are *calculated* to

promote the species of exercise to which most people have a morbid aversion." "I *calc'late*, friend, you are a stranger in these parts." For "*is calculated*" in the first example, say "*is likely*." In the second example, say "*have a tendency to*." In the third say "*I suppose*, sir, you are a stranger here."

**Caption.**—"The *caption* of the paragraph." Say "the heading of the paragraph."

**Catch.**—"If you hurry you may *catch* the cars." Say "*catch up* with the cars," or *overtake* them.

**Convene.**—"The President *convened* Congress." Say, the President *convoked* Congress, or *called* a session of Congress. But Congress *convened* (that is, came together) at the call of the President.

**Directly.**—"*Directly* Mr. Hendricks finished his speech, Mr. Thompson rose to oppose the motion." Say "as soon as," etc. "I will come directly." Say "immediately."

**Dry.**—"I am *dry*, let me have a glass of water." Say "I am thirsty."

**Empty.**—"The Ohio river *empties* into the Mississippi." It is better to say "*flows*." The river cannot be emptied while any water remains in its channel.

**Endorse.**—"He *endorsed* this proceeding." Say "he *approved*," or "*commended* this proceeding."

**Enjoys bad health.**—"This business would suit any one who *enjoys bad health*." Say "who is in delicate health," or "who is in bad health."

**Expect.**—"I *expect* my brother sold his house yesterday." Say "I *expect to hear* that he sold it," or, "I think," "believe" or "am confident," "I think," or "I hope that he sold it." We do not expect things of the past, but of the future.

**First, the First.**—"I have not yet heard of *the first* objection to the scheme." Say "a single objection," or "I have heard of no objection."

**Get.**—"I am afraid Mary is *getting* crazy." Say "is growing," or "is becoming crazy." "John *got* left by the train." Say "was left." We *get* any thing that we come in possession of. We may also *get* a disease. But *get* must be followed by a noun as its object.

**Gratuitous.**—"That is a *gratuitous* assumption." It is better to say "unfounded," "unreasonable," or "unwarranted."

**Half.**—"Cut it in *half*." Say "cut it in halves," or "cut it in two." There must be two halves.

**Hearty.**—"He ate a *hearty meal*." Say "he ate heartily of the meal." It is the eater not the meal, that is *hearty*.

**Inaugurate.**—"He receives regular information of the official changes to be *inaugurated* at Albany and Washington." "A subscription was *inaugurated* last evening to purchase a house for Gen. Sherman." Say "changes to be made," "a subscription was commenced," "started," "opened," or "begun." *Inaugurate* means to induct into office under solemn ceremonies. The President of the United States is *inaugurated*, as also are the Presidents of colleges. Pastors are *installed*. A ball is *opened*, a new business is *established*.

**Initiate.**—"He *initiated* the proceedings." Say "he opened them." "He took the *initiative* in the affair." Say he "commenced," "begun," or "opened" the transaction.

**Leave.**—"I shall *leave* this morning." Leave what? If any thing, or any place, name it. If you mean "go away," say "I shall go away."

**Light.**—"In reading Macaulay's essays, I suddenly *lit upon* the passage I wanted." Say "met the passage," or "found the passage." Another bad expression is, "I came across the passage."

**Limb.**—"She fell, and bruised her *limb*." Say what limb. The arm is a limb, as well as the leg. The foolish shame which avoids mentioning the leg by name, is not modesty but prudery.

**Like.**—"We don't do that *like* you do." Say "as you do."

**Midst.**—"In our midst." Say "among us," or "in the midst of us."

**Most for Very, &c.**—"It is a *most melancholy* and *most* unaccountable fact." Say "very melancholy" and "quite unaccountable."

**Monstrous.**—"It was a *monstrous* gathering." Say "large," "great," or "immense." Monstrous means ill formed, misshapen.

**Never.**—"Washington was *never* born in New York." Say "Washington *was not*," etc. Do not use *never* in denial of events which by their nature could take place but once.

**Notice.**—"I shall *notice* a few particulars" is frequently used when "I shall *mention* a few particulars" is meant.

**Obnoxious.**—"His conduct is *obnoxious* to me." Say "his conduct is *offensive* to me." *Obnoxious* means exposed to. A per-

son or his conduct may be obnoxious to blame, to censure, to reproof, etc., but not to persons.

**Of all others.**—"The guerilla style of warfare is *of all others* the most barbarous." Say "of all styles," or "above all others."

**Over, under.**—"He wrote *over* the signature of Junius." Say "*under* his signature," in all cases.

**Over, with a number.**—*Over* 300 persons were present." It is better to say "*upwards* of 300 persons," or "*more than* three hundred persons."

**Over a bridge.**—"He went *over* the bridge." It is more exact to say, "he went *across* the bridge." A bird may fly *over* a bridge, if it does not touch the bridge.

**Partial—Partially.**—"This view is *partially* correct." Say "partly correct," or "in part correct" is better. *Partially* means, properly, one sided, with bias.

**Portion.**—"A large *portion* of the town was burned." Say "part." A *portion* is a part set aside for any one.

**Posted.**—"He is *posted* on that subject." Say "he is well informed."

**Predicate.**—"My opinion is *predicated* on the belief," etc. Say "is based upon the belief," or "formed upon it."

**Prejudice.**—"I was *prejudiced* in his favor." Say "was prepossessed." We are *prejudiced* against people or things.

**Promise.**—"I *promise* you I was much astonished." Say "I assure you."

**Repudiate.**—"Secretary Stanton *repudiated* the policy of Mr. Johnson's administration." Say "disowned it," "condemned it," "disapproved of it," or "denounced it."

**Section.**—"Mr. Smith does not live in this *section*." Say "in this neighborhood," "vicinity," or "part of the country." A *section*, in geography, is one square mile, or 640 acres of land, which has been laid out by the government surveyors, and called "Section No. —." The use of the word as a term of place in any other sense is improper.

**Stand.**—"He *stands* upon security." Say "*insists* upon security."

**Stop.**—"Mr. Ferguson is *stopping* at the American House." Say "is staying." *Stopping* is a momentary act. As soon as one has stopped he stops *stopping*, and begins to *stay*. It is customary,

however, to express a very brief stay by *stop*. "We stopped at Altoona twenty minutes for breakfast."

**Transmit.**—"He *transmitted* his check for the amount." Say "he *sent* his check.'

**Transpire.**—"More than a century *transpired*." Say "elapsed." "The bass-ball match for the championship between the Atlantics and the Mutuals *transpired* yesterday." Say "took place." News or a secret may *transpire*, an event cannot. The word means to *breathe through*, to *leak out*, and can be correctly used only when such a construction can be put upon it. "What took place at the cabinet meeting yesterday"—that is, news, report, or knowledge of what took place—"has not transpired," is correct.

**Try and.**—"I will *try and* do it." Say "I will *try to* do it."

**Undeniable.**—"Mr. Jones is a person of *undeniable* character." Say "*of unexceptionable* character." An *undeniable* character is one that cannot be denied. It may be good or bad, but whichever it is, there can be no dispute about it. An *unexceptionable* character is one to which no exception can be taken.

**Existing truths.**—Matters that are as true now as at the time spoken of, should be stated in the present tense, no matter what may be the tense of the context. "His text was, that 'God *was* love,'" should be "His text was, 'God is love.'" "The truth *was*, that John struck him first." Say "the truth is, that John struck him first." "I told him that the Mississippi *ran* southwardly." Say "runs southwardly." "Did you tell him you *were* Johnson's brother." Say "that you are Johnson's brother." "They ascertained that the great pyramid *stood* near the banks of the Nile." Say "that the great pyramid stands."

**Instead of.**—"I *have seen* him last week." Say "I saw him last week." "Last week" is a past time. "I *saw* him this week." Say "I have seen him this week." This week still continues.

**"The Lord hath given,** and the Lord hath taken away." Say "the Lord gave."

**"All the brothers** *have been* greatly indebted to their father." Say "are greatly indebted." But if by any strange circumstance they may have discharged the obligation, "have been indebted" would be correct.

**Adverb with the infinitive.**—"Teach scholars *to carefully scrutinize* the sentiments advanced in all the books they read." Say "carefully to scrutinize," or "to scrutinize carefully.'

**Befell—befallen.**—"It has *befell* me." Say "It has befallen me." But say, in the imperfect, "it befell me."

**Began—begun.**—"I have *began* to study history." Say "I have begun." But it is correct to say, using the imperfect, "He began to cut his wheat yesterday." "I begun" is also used as an imperfect form.

**Broke—broken.**—"I have *broke* my gun lock." Say "have broken." But say, using the imperfect, "I broke the lock yesterday."

**Chose—chosen.**—"She has *chose* the blue silk." Say "has chosen." But say, in the imperfect, "she chose him in preference to the others."

**Come.**—"I *come* to town yesterday." Say "I came." But say, using the imperfect, "I have come from Pittsburg to attend to this business."

**Did—done.**—"Who *done* it?" Say "who did it?" "who has done it?"

**Drank—drunk.**—"He was very thirsty, and *drunk* eagerly." Say "drank." "He has *drank* three glasses of soda water." Say "has drunk." "Drunken," the ancient form of the participle, is not now used.

**Drove—driven.**—"They have *drove* very fast." Say "they have driven." But using the imperfect, say "they drove the people out, and locked the gates."

**Froze—frozen.**—"The potatoes are *froze*." Say "the potatoes are frozen." But say, in the imperfect, "it froze very hard last night." Avoid saying *frozed* or *frizen*.

**Rode—ridden.**—"I have *rode* fifty miles on horseback today." Say "I have ridden." But say, using the imperfect, "a courier rode up with great speed to warn them of the approach of the enemy."

**Rang—rung.**—"I have *rang* the bell half a dozen times." Say "have rung." But say, in the imperfect, "they rang the bells merrily for Christmas day."

**Saw—seen—see.**—"I *see* him last Monday." Say "I saw him." "I *seen* him yesterday." Say "I saw him." "I *hav'n't saw* him for a long time." Say "I hav'n't seen him." *See* is present, *saw* imperfect, *seen* the participle. The habit of confusing them prevails widely.

**Shook—shaken.**—"Have you *shook* the carpet?" Say *shaken*.

But say, in the imperfect, "they shook it well." Do not in any case say *shaked.*

**Spoke—spoken.**—"It was *spoke* in my hearing." Say "it was spoken." But say, in the imperfect, "Mr. L. being called upon, spoke as follows." Spake, the ancient imperfect, is not now in use.

**Swam—swum.**—"I have *swam* across the river many a time." Say "have swum." But say, in the imperfect, "the mate swam to the shore with a rope." *Swum* may also be used as the imperfect. "The mate swum" would be correct.

**Took—taken.**—"Mr. Smith and family have arrived in Washington and *took* up their quarters for the winter." Say "have arrived in Washington and taken up their quarters," etc.

**Went—gone.**—"He would have *went* with us, if he had been invited." Say "he would have gone." But say, in the imperfect, "being invited, he went with us."

**Wove—woven.**—"This cloth is *wove* very compactly." Say "is woven." But say, in the imperfect, "the girls wove jeans and linseys enough to clothe the family."

**Beholden—beholding.**—"I am *beholding* to you for it." Say "I am beholden."

**Know—knew—known.**—"I *knowed* it." Say "I knew it." "I have *knowed* it all along." Say "I have known it."

**Plead.**—"He *plead* earnestly," say "he pleaded earnestly."

**Proved—proven.**—"That is not *proven.*" Say "that is not proved."

**Idiomatic use of some verbs.**—Sometimes an active and transitive verb is used in its entire form intransitively or in a passive sense. "The cloth tears too easily;" "Mahogany planes smoothe;" "These lines read well." Sometimes an intransitive verb takes a kindred noun as an object. "He lived a virtuous life;" "This dream which I (Pharaoh) have dreamed."

**Words** like *scissors, snuffers, tongs, trousers,* etc., denoting articles which are paired or coupled, are plural, and take a plural verb. "The scissors are dull," not "is dull."

**"Many is the exhortation given."** Say "many *are* the exhortations given."

**As he has.**—"I can lift as many pounds as *he has.*" As "he has" what? Say as "he has lifted."

**"The first** remark I have to make *shall* be." Say "the first remark I shall have to make will be."

**Is ceased.**—"The storm *is* ceased." Say "has ceased."

**Was burning since.**—"The fire *was* burning since Wednesday night." Say "the fire had been burning since Wednesday night."

**"Each of the daughters take an equal share."** Say "takes." "Every leaf, every twig, every blade, every drop of water, *teem* with life." Say "teems." Also, instead of "one of those house *have* been sold," say "has been sold."

**"Where is it, says I to him."**—Say in all such instances, "said I."

**"John will earn his wages** when his work is done." Say "will have earned."

**Use the subjunctive form instead of the indicative in hypothetical cases.**—"*Was* I to tell of all her good qualities it would look like flattery." Say "were I to tell." "Be that *as it will*." Say "be that as it may."

**Was you?—you was.**—Say "were you?" "You were."

**I who is.**—"It is I who *is* to go." Say "who am to go."

**It is one of the subjects that is, etc.**—Say "it is one of the houses that *was* built by Mr. Jones." Say "it is one of the houses that were built," etc.

**"Be wise and good that you might be happy."**—Say "that you may be happy."

**Among—Between.**—"The father divided part of his property *among* his two children, and distributed the remainder *between* his other kin," should be "he divided a part *between* his two children, and distributed the remainder *among* his other kin."

**"John** will be *apt* to catch the fever if he goes into that house," should be "John will be liable," etc. A person who is studious may be spoken of as *apt* to learn, and *liable* to become dyspeptic.

**At length—At last.**—"I have heard from my friend *at length*," may mean, and often does mean, that a detailed statement of his affairs,—a setting of them forth at length—has been received. "I have heard from him at *last*" must mean that he has been heard from, after long waiting for news from him.

**Than him.**—"You are stronger than *him*." Say "than *he*."

**It was them.**—Say "it was *they*."

**Is it me.**—"Is it *me* you mean?" Say "is it *I?*" or "do you mean *me?*"

**It is him whom.**—"It is *him* whom you said it was." Say "it is *he.*"

**"In consequence of me neglecting."**—"The horse got away in consequence of *me* neglecting to fasten the gate." Say "in consequence of *my* neglecting," etc.

**With James and I.**—"They went with James and *I.*" Say "with James and *me.*"

**Not me.**—"Who made that noise?" "Not *me.*" Say "not *I.*" "It wasn't *me.*" Say "It wasn't *I.*"

**Me being.**—"*Me* being absent, the young folks lived high." Say "*I* being absent," or "while *I* was absent," or "during my absence."

**Between you and I.**—"This is a secret between you and *I.*" Say "between you and *me.*" Better "with you and me."

**Let you and I.**—Say "let you and *me.*"

**As good as me.**—Say "as good as *I.*"

**It is me.**—Say "it is *I.*"

**"You and us enjoy many privileges."**—Say "you and *we.*"

**He and they we know.**—"*He* and *they* we know, but who are you?" Say "him and them we know."

**If I was him.**—"I would do the same if I was *him.*" Say "if I was *he.*"

**He that was mentioned.**—"They chose William, *he* that was mentioned before." Say, *him* that was mentioned," or better, "him who was mentioned."

**I am him.**—"I know I am *him* whom he meant." Say "I am *he.*"

**That is him—that is her.**—Say "that is *he,*" "that is *she.*"

**From him having.**—"*From him having* always assisted me, I again applied to him for help." Say "because he had," etc.

**"What you saw was but a picture of him, and not him."**—Say "and not *he.*"

**To be they.**—"I knew it to be *they.*" Say "to be *them.*"

**As for who.**—"The boy *as* is reading." Say "the boy *who* is reading."

**Who for whom.**—"Do you know *who* this cane belongs to?" Say "to *whom* this cane belongs." "Whom this cane belongs

to" is correct, and less formal. "*Who* do you wish to see?" Say "whom." "He did not know *who* to suspect." Say "whom to suspect." "He is a person *who* I respect very much." Say *whom* I respect."

**Which for who.**—"The men *which* you saw." Say "the men *whom* you saw." But, of an animal, "the horse which you saw."

**Of the relative pronouns,** *who* is used exclusively with persons, *which* exclusively with things, and *that* with persons and things. In common conversation *that* is more frequently used with persons than *who*. But *who* is considered more elegant.

**Where for in which.**—"It is a cause *where* justice is particularly concerned." Say *in which*. "We presented a paper *where* his case was fully explained." Say "a paper *in which*." But *where* may be used instead of *which* and a preposition when place is the prominent idea. "The old house where I was born."

**Them books.**—"Give me *them* books." Say "*those* books."

**Thus for this.**—"The manner of it is *thus*." Say "the manner of it is *this*," or "*this* is the manner of it."

**This for thus or so.**—"*This* much is certain." Say "*thus* much," or, "so much."

**I who is.**—"It is *I who is* to receive the appointment." Say "it is I *who am* to receive the appointment."

**Those set.**—"I will take *those* set of books." Say "*that* set."

**This twenty years.**—"I have not been there *this* twenty years." Say "*these* twenty years."

**One another — themselves.**—"These authorities differ among *one another*." Say "differ among *themselves*."

**Every for all.**—"The men deserve *every* praise." Say "*all* praise." "*Every* human being has this in common." Say "*all* human beings have," or, "each human being has this in common with every other one."

**Every for entire.**—"I have *every* confidence in him." Say "*entire* confidence." *Every* means "each of all," and should not be used in any other sense.

**All for each.**—"Seven lads were present, and he gave them *all* a book." Say "he gave them *each* a book."

**Such for so.**—"*Such* distinguished virtues seldom occur." Say "*so* distinguished virtues," or, "virtues so distinguished."

**All—the whole.**—"Almost *the whole* inhabitants were pres-

ent." Say "almost *all* the inhabitants." But say "almost the whole society attended the ceremonies." Use *all* in speaking of a multitude or collection by the individual parts, *the whole* when it is spoken of as a body.

**Number of every.**—"Every rifleman and lancer *were* at *their* post." Say "*was* at *his* post."

**The indeterminate possessive.**—"Every child should obey *their* parents." Say "*his* parents." "No one should incur censure for being careful of *their* good character." Say *his*, or *her*, if talking more particularly of women. "Let each of us mind *their* own business." Say "*his* own business."

**"When he was entered."** Say "when he had entered." So also say "when he had departed," "when he had returned."

**"I catched it."** Say "I caught it."

**"Of two evils choose the least."**—Say "the less."

**"Is this or that the best road?"**—Say "the better road."

**"The prisoner has,** of all the gang, committed the fewer misdemeanors." Say "the fewest."

**Perfect.**—"This is the *more perfect* of the two." "This is the *most perfect* piece of mechanism I ever saw." Such expressions are in common use. They are allowed but not encouraged. "More nearly," or "most nearly perfect," is a more accurate term.

**Chief.**—"He sought the *chiefest* positions." Say "the *chief*." The *chief* positions are the head positions; "the chiefest" would be "the headest."

**Universal.**—"Of all vices, pride is the most *universal*." Say "most general." What is "universal," extending over, and including the whole universe and every thing in it, cannot be more so.

**Right—wrong.**—"That is *very* right." "That is *very* wrong." Omit *very* in both cases.

**Agreeable—agreeably.**—"*Agreeable* to my promise." Say *agreeably*.

**Bold—bolder—more boldly.**—"He acts *bolder* than was expected." Say *more boldly*.

**Comformable — comformably.** — "*Conformable* to your orders." Say "*conformably* to your orders."

**Distinct — distinctly.** — "The girl speaks *distinct*." Say "speaks *distinctly*."

**Exceeding—exceedingly.**—"He was *exceeding* kind to me." Say *exceedingly kind.* "She was *exceeding* careful." Say *exceedingly careful.*

**Fluent—fluently.**—"He speaks very *fluent*." Say *very fluently.*

**Indifferent—indifferently.**—"He was *indifferent* honest." Say *indifferently honest.*

**Near—nearly.**—"I lost *near* twenty pounds." Say "*nearly* twenty pounds."

**Previous—previously.**—"He wrote me *previous* to his coming." Say "*previously* to his coming."

**Remarkable—remarkably.**—"She is a *remarkable* pretty girl." Say *remarkably pretty.*

**Shocking—shockingly.**—"This letter is written *shocking*." Say *shockingly. Shockingly* is generally too strong a term to employ in this case. *Badly* is a better word. Bad writing is not so uncommon or so important a matter as to cause a shock.

**Never—not for.**—"He was *never* an instant diverted from his purpose." Say "*not for* an instant."

**Seldom or ever.**—"I seldom *or* ever see him now." Say "seldom *if* ever," or "seldom or never."

**Almost never.**—*Scarcely ever*, or *hardly ever*, is better.

**Never so.**—"He is a man of honor, be he *never* so close in trade." Say "*ever* so close."

**Such a—for so.**—"He was *such a* disagreeable fellow that no one liked him." Say "he was *so* disagreeable *a* fellow."

**This—thus—so.**—"*This* much is certain." Say "*thus* much," or "so much is certain."

**So for very.**—"That was *so* nice." Say *very nice.*

**Very—very much—greatly.**—"I was *very disappointed.*" Say "*very much* disappointed," or "greatly disappointed."

**Very much of.**—"He is *very much* of a gentleman." Say "he is very gentlemanly."

**Over for more than.**—"There were not *over* twenty persons present." It is better to say "not *more* than twenty persons."

**As for that.**—"Not *as* I know." Say "not *that* I know."

**But for if.**—"I shouldn't wonder *but* that was the case." Say "*if* that was the case."

**But for than.**—"We suffered no other inconvenience *but* that arising from the rain." Say "no other inconvenience *than* that,"

etc., or omitting *other*, and using *but*, "We suffered no inconvenience but that arising from the rain."

**But for that.**—"I have no doubt *but* he will be here to-night." Say "I have no doubt that," etc. "I doubt not *but* I shall be able." Say "I doubt not that I shall be able." Some writers have a habit of omitting the conjunction altogether, saying, "I doubt not I shall be able." This is a slipshod style.

**If that.**—"If *that* I had offended him." Omit *that*.

**In so far as.**—"We are to act up to the extent of our knowledge; but *in* so far as our knowledge falls short." Say "so far *as*," omitting *in*.

**Doubt not but.**—"I doubt not *but* I shall be able to help you." Say "I doubt not that," or, better, "I have no doubt," or "I do not doubt, that I shall be able," etc.

**If for whether.**—"He doubts *if* his friend will come." Say "he doubts *whether*," etc.

**That for if or whether.**—"I doubt *that* it be so." An awkward expression, though common. Say "I doubt *if*," or "I doubt whether."

**After that.**—"After *that* he had seen the parties." Omit *that*.

**But that.**—"I don't know but *that* I shall buy that house." Omit *that*.

**But what.**—"They will never believe *but what* I have been to blame." Say "but I have been to blame," or, better, "that I have not been to blame."

**No doubt but that.**—"There can be no doubt *but* that he will succeed." Say "there can be no doubt that he will succeed," or, "there is no doubt of his success."

**Not impossible but.**—"It is not impossible *but* I may go with you." Here are two errors. *That* should be used instead of *but*. In "not impossible," two words are used to express what one word expresses better. By this one of the words is made to kill the force of the other. Say "it is possible that I shall go with you," or "it is probable," or "possibly I shall go with you."

**Confide.**—"He is a man *on* whom you can confide." Say "*in* whom you can confide." But "*on* whom you can rely," "*on* whom you can depend," "whom you can trust."

**Fall into a man's conversation.**—"When I *fall into that*

*man's conversation*, I am entertained and profited." Say "when I engage in conversation with that man."

**Taking one apart.**—"I took my friend *apart* to converse with him." Say "I took him aside," and avoid a ludicrous suggestion.

**To change one's self.**—"I am very wet, and must change *myself*." Say "I am very wet, and must change *my clothes*."

**One of the family.**—"Wanted, two apprentices, who will be treated *as one* of the family." Say "will be treated as members of the family."

**"I have** not written to him, and am not likely *to*." Supply the verb, "am not likely to *write* to him."

**Quite the lady.**—"She is *quite* the lady." Say "she is very ladylike."

**Such expressions as** "I do not like *too much* sugar," "I do not want to walk *too* far," are indefinite. They mean "I do not like more sugar than I like," "I do not want to walk farther than I like."

**Not only—for only—except—or unless.**—"The cars will *not* stop at this station *only* when the bell rings," should be, "the cars will not stop at this station *unless* the bell rings," or "*except* the bell rings." It would be correct also to say, "the cars will stop at this station only when the bell rings," omitting *not*.

**A most beautiful.**—"It was a *most* beautiful sight." Say *a beautiful sight*, or *a very beautiful sight*. The superlative degree is not used with the indefinite article. "A most a beautiful sight" is low.

**Most for almost.**—"They see each other *most* every day." Say *almost*.

**"Not as I know of."**—"Say "not *that* I know of."

**Some for somewhat.**—"He is *some* better to-day." It is better to say "he is somewhat better."

**Bad and badly.**—"He feels *bad*," used sometimes in description of ill health, means literally that he is troubled with a sense of wickedness. "He feels badly," expresses clearly that he is sick.

**Good for well.**—"He can do it *as good* as any one else can." Say *as well*.

**Bred and born.**—"*Bred and born*," should be, "*Born* and *bred*."—*Birth* precedes *education*.

**Not mistaken.**—"If I am *not mistaken*," should be, "If I *mistake not*."

**Are mistaken.**—"You *are mistaken*," should be, "You *mistake*."

**Had—would.**—"I *had* rather not," should be, "I *would* rather not."

**Had better.**—"I *had better* go," should be, "It *were better* that I should go."

**New pair.**—"A *new pair* of gloves," should be, "A *pair of new* gloves."

**Very rising.**—"He is a *very rising* man," should be, "He is *rising rapidly*."

**To let.**—"Apartments *to let*," should be, "Apartments *to be let*."

**Learns.**—"Who *learns* you French?" should be, "Who *teaches* you French?"—The pupil learns.

**Less—fewer.**—"No *less* than ten persons," should be, "No *fewer* than ten persons."—*Less* must be applied to quantity, as "No *less* than ten pounds."—*Fewer* must be applied to things.

**Never—whenever.**—"I *never* speak *whenever* I can help it," should be, "I never speak *when* I can help it."

**Get over.**—"To *get over* an illness," should be, "To *survive*," or, "To *recover from* an illness." "To *get over* a person," should be, "To *persuade* a person." "To *get over* a fact," should be, "To *deny*," or "*refute*" it.

**Never.**—"Be it *never* so good," should be, "Be it *ever* so good."

**Began.**—"I have *began*," should be, "I have *begun*."

**The then.**—"The *then* Mrs. Howard," should be, "The Mrs. Howard *then living*," or "*of that time*."

**Ought.**—"For *ought* I know," should be, "For *aught* I know."—*Aught* means *anything; ought* implies obligation.

**As far as.**—"*As far as* I know," should be, "*So far as* I know."—*As far as* expresses distance.

**Couple.**—"A *couple* of dollars," should be, "*Two* dollars."—Couple implies union, as, "a married couple."

**United together.**—"They are *united together*," should be, "They are *united*."

**So much.**—"She is *so much* the lady," should be, "She is very *lady-like*."

**Noways.**—"He is *noways* in fault," should be, "He is *nowise* in fault."

**Like.**—"He is *like* to be," should be, "He is *likely* to be."

**All over.**—"*All over* the land," should be, "*Over all* the land."

**Whenever—always.**—"*Whenever* I sing I *always* am applauded," should be, "*Whenever* I sing, I am applauded."

**To—with.**—"I am stout in comparison *to* you," should be, "I am stout in comparison *with* you."

**At—by.**—"It will look beautiful *at* night," should, "*By* night."

**Best.**—"At *best*," should be, "At *the best*."

**Worst.**—"At *worst*," should be, "At *the worst*."

**For to.**—"For *to* give," should be, "*To* give."

**Eat up.**—"The dinner was *all eat up*," should be, "The dinner was *all eaten*."

**Eat.**—"I *eat* heartily of fruit," should be, "I *ate* heartily," etc.

**Again.**—"He *again repeated* it," should be "He *repeated* it."—*Again* is included in *repeated*.

**Approved.**—"His conduct was *approved of* by all," should be, "His conduct was *approved* by all."

**Sweetly—sweet.**—"The rose smells *sweetly*," should be, "The rose smells *sweet*."—You smell, and not the rose, and an adjective must be used to express the quality of a thing. "Those roses scent the room *sweetly*," is correct, because the roses scent and not you, and an adverb is required to express the action.

**In—into.**—"He fell *in* the river," should be, "He fell *into* the river."—*Into* should be used after a verb of motion; *in*, when motion or rest *in* a place is signified: "I walk *in* the garden daily," "I sleep *in* this room."

**Every—another.**—"Handed down from *every* age to *another*," should be, "Handed down from *one* age to *another*." "On *some* day or *another*," should be, "On *some* day or *other*."—*Another* corresponds to *one*, *some* and *every* to *other*."

**In.**—"Who finds him *in* money?" should be, "Who finds him money?"

**Two first.**—"The *two first*," should be, "The *first two*."

**Two last.**—"The *two last*," should be "The *last two*."

**First of all.**—"The *first of all*," should be, "The *first*."

**Last of all.**—"The *last of all*," should be, "The *last*."

**Will—may.**—"Be that as it *will*," should be, "Be that as it *may*."

**Every—all.**—"My *every* hope," should be, "*All* my hopes."

**When—which.**—"Since *when*," should be, "Since *which time*."

**If that.**—"*If that* I said so," should be, "*If* I said so." "*After that* you had spoken," should be, "*After* you had spoken." —*That* is superfluous.

**What—that.**—"I do not know but *what* I shall call upon you," should be, "I do not know but *that* I shall call upon you."

**Of—at.**—"I am glad *of* your success," should be, "I am glad *at* your success."—"Glad *of*," should be used when something is gained or possessed; "Glad *at*," when something happens to another.

**From—to.**—"I am averse *from* it," should be. "I am averse *to* it."—We show aversion *to*, not *from* a thing.

**Got.**—"He has *got* money," should be, "He *has* money."—*Got* is superfluous.

**An one.**—"Such *an one*," should be, "Such *a one*."—*An* should not be used before a long *u*, *o* when that vowel has the sound of *w*, or *eu*. Thus, it is correct to say, *a University*, *a European*, *a unit*.

**Or—are.**—"I *or* my son *are* to call," should be, "I *or* my son *is* to call." "Neither one *nor* the other *are* true," should be, "Neither one *nor* the other *is* true."—*Or* and *nor* are *disjunctive* conjunctions, and separate things.

**Setting.**—"The hen is *setting*," should be, "The hen is *sitting*."

**Hung—hang.**—"He was *hung*," should be, "He was *hanged*." —To *hang*, to take away life by hanging, is a regular verb, having *hanged* for its past participle. To *hang*, to suspend, is an irregular verb, having *hung* for its past participle, as, "The picture was *hung* up." "His life *hung* upon a thread."

**Propose—purpose.**—"I *propose* going," should be. "I *purpose* going."

**No—not.**—"Is it true or *no?*" should be, "Is it true or *not?*"

**Sets.**—"The wind *sets*," should be, "The wind *sits*."

**Further—farther.**—"He walked *further* than you," should be, "He walked *farther* than you."—*Farther* must be applied to distance, *further* to quantity, as "*Further* funds are wanted."

**Over again.**—"I said so *over again*," should be, "I *repeated it*."

**But—than.**—"No sooner *but*," should be, "No sooner *than*." "No other *but*," should be, "No other *than*."

**Nobody else.**—"*Nobody else* but him," should be, "*Nobody* but him."

**Back—ago.**—"Six weeks *back*," should be, "Six weeks *ago*," or "*since*."

**This—these.**—"*This* two days," should be, "*These* two days."

**Mean—intend.**—"Do you *mean* to come," should be, "Do you *intend* to come."—To *mean* is to *signify*; to *intend* is to *purpose*.

**Each.**—"*Each* of them *are*," should be, "Each of them *is*."—*Each* means one *and* the other of two.

**Neither—or.**—"*Neither* one *or* the other," should be, "Neither one *nor* the other."—*Neither* (not either) means, not the one *nor* the other of two.

**Either—any.**—"*Either* of the *three*," should be, "*Any one* of three."—*Either* means one, *or* the other of *two*.

**Every—are—is.**—"*Every* one of them *are*," should be, "Every one of them *is*."—*Every* refers to any *one* of a number more than two.

**Whom—to whom.**—"*Whom* do you speak *to?*" should be, "*To whom* do you speak?"—The preposition should not be separated from the relative. The answer should be, "*Him*," or "*Her*."

**I—me.**—"*Who* said that?" The answer should be, "*I* (said it)," not "*me*."—The word containing the answer to a question must be in the same case with the word which asks it.

**Into—from.**—"They were refused entrance *into*, and driven *from the house*," should be, "They were refused entrance *into the house*, and driven *from it*."—Two propositions should not be connected with a noun.

**Ever.**—"As soon as *ever*," should be, "As soon as."

**Some—one.**—"You will *some* day be sorry," should be, "You will *one* day be sorry."

**Direct—address.**—"*Direct* to me," should be, "*Address* to me."

**Very.**—"The *very* best," should be, "The *best*." "The *very* worst," should be, "The worst."

**Now.**—"From *now*," should be, "From *this time*."

**With—from.**—"I differ *with* him," should be, "I differ *from* him."

**Thought—think.**—"Therefore, I *thought* it proper to write *to* you," should be, "Therefore, I *think* it proper to write *to* you."

**With—in.**—"Conversant *with* politics," should be, "Conversant *in* politics."—We say conversant *with* men, *in* things.

*Oh*, *Ah*, and other interjections, generally require the *objective* case of *I*, and the *nominative* case of *Thou*, as "Ah *me!*" "O *thou* fool!" "O *ye* hypocrites!" "Woe's *thee*" (*is to* thee) is correct.

*Oh* is used to express pain, sorrow, or surprise; *O* to express wishing, exclamation, or an address to a person.

"Since *then*," should be, "Since *that time*."

"A *summer's* morning," should be, "A *summer* morning."

**Have got.**—"My clothes *have got* too small, or too short for me," should be, "I have become too stout or too tall for my clothes."

**Most perfect.**—"A *most perfect* poem," should be, "A *perfect* poem."—Perfect, supreme, complete, full, empty, true, false, chief, universal, honest, do not admit of comparison.

**In—within.**—"Is Mr. Smith *in?*" should be, "Is Mr. Smith *within?*"

**Other.**—"The *other one*," should be, "The other." *None* other," should be, "*No* other."—*Another* has no plural. "*Another one*," should be, "Another."

**Spoonsful.**—"Two spoon*sful*," should be, "Two spoon*fuls*."—You do not measure the medicine, etc., in *two* spoons. For the same reason we say *Mouthfuls*, *Cupfuls*, *Handfuls*.

**To.**—"I spoke *to*, and *warned him*," should be, "I spoke *to him* and *warned him*."—A preposition and an active verb should not be connected with a noun or pronoun.

*Therefore*, *Doubtless*, and *Perhaps*, are generally placed at the beginning of a sentence, as "*Perhaps* he will."

**Left.**—"I *left* this morning." Name the place left.

**Head and ears.**—"Over head *and ears*," should be, "Over *head*."

**Perhaps.**—"I may *perhaps*," or "*probably*," should be, "I may."

**Possibly.**—"I can *possibly*," should be, "I *can*."—*May* and *can* imply probability.

**No—not.**—"Whether he will or *no*," should be, "Whether he will or *not*."

**Says—said.**—"*Says* I," should be, "*Said* I," or, "I *said*."

**Contemptibly.**—"He spoke *contemptibly* of him," should be, "He spoke *contemptuously* of him."

**Cannot—can.**—"*Nothing* can*not*," should be, "Nothing *can*."

**No—not.**—"*No* one has *not*," should be, "No one *has*."

**Oftener.**—"I am *oftener* well than ill," should be, "I am more *frequently* well than ill."

**Without—unless.**—"I cannot agree to it *without* you promise," should be, "I cannot agree to it *unless* you promise."

**Quantity.**—"There was a *quantity* of people," should be, "There was a *number* of people,"

**Good and all.**—"For *good and all*," should be, "For *ever*."

**Above—more.**—"It is *above* a month since," should be, "It is *more* than a month since."

**Superior.**—"He is a *superior* man," should be, "He is *superior to most* men."

**At—in.**—"He lives *at* New York," should be, "He lives *in* New York."—*In* should only be applied to capital cities.

**To.**—"He lives opposite the park," should be, "He lives opposite *to* the park."

**Right—bound.**—"I have *no right* to pay this bill," should be, "I am not *bound* to pay this bill."

**On—of.**—"I think nothing *on* it," should be, "I think nothing *of* it." "Take hold *on* it," should be, "Take hold *of* it."

**Need—needs.**—"He *need* not do it," should be, "He *needs* not do it."

**Me—I.**—"You are older than *me* (am)," should be, "You are older than *I* (am)."

**Her—she.**—"I am taller than *her* (is)," should be, "I am taller than *she* (is)."

**Over—across.**—"Go *over* the bridge," should be, "Go *across* the bridge," unless you mean, "to go from side to side."

**Some—at some.**—"I was some distance from home," should be, "I was *at* some distance from home."

**Some.**—"I knew him *some* six years ago," should be, "I knew him six years ago."

**Here—hither.**—"Come *here*," should be, "Come *hither*."

**Such another.**—"For *such another* book," should be, "For *another such* book."

**Mutually.**—"They *mutually* loved *each other*," should be, "They loved *each other*."—*Mutually* means both.

**Eminent.**—"He was in *eminent* danger," should be, "He was

in *imminent* danger."—*Eminent* relates to rank. *Imminent* means to hang over.

**Plenty.**—"Vegetables were *plenty*," should be, "Vegetables were *plentiful*."

**Ye—you.**—*Ye* must always be used in the *nominative* case, as "*Ye* have wronged me," but never in the *objective* case. "I have wronged *ye*," should be, "I have wronged *you*.'

**One—he.**—"When *one* speaks incorrectly, *he* should not be offended at being politely corrected," should be, "When *one* speaks incorrectly, *one*," etc.

**They—those.**—"*They* who do right shall be blessed," should be, "*Those* who do right," etc. *Those* stands for a noun not introduced but understood.—*They* stands for a noun already used, as "I saw the *pictures*. *They* are very good."

**That—this.**—"They are not experienced, and for *that* reason," etc., should be, "and for *this* reason," etc. "*Those* pictures which I see," should be, "*These*," or "*The* pictures," etc. *This* or *these* refer to things *present* or *just named*, *that* and *those* to things *past*.

**Has—have.**—"Ignorance and official routine *has* caused the evil," should be, "Ignorance and official routine *have* caused the evil." Two or more singular nouns coupled with *and* require the verb to be in the *plural* number, unless the nouns denote only *one* person or thing, as "That great statesman *and* warrior *has* said," etc. When the nouns coupled with *and* are qualified by *every*, the verb should be *singular*, as "*Every* man and woman *was*," etc.

**This—these.**—"They were industrious, and by *this* means rose to eminence," should be, "and by *these* means."—*This means* and *that means* refer to what are singular; *these means* and *those means* to plurals. *By means*, *By this means*, etc., are used to denote instrumentality, as "*By means* of art."—*A mean* is used only to denote a middle state, as "There is *a mean* between extravagance and stinginess."—*Amends* should be used in the same manner, as "That will be *an amends* to me for my exertions." "Fame and wealth are *amends* for his dangers."

**Do.**—"You *do* me *honor*," should be, "You honor me."—You might as well say, "You *do* me *flattery*," instead of "You flatter me."

Avoid using "fine" language. Speak good, strong, expressive English, such as Shakespeare and the best writers used. Many persons affect grandiloquent language, ponderous, but poor.

# GUIDE TO BUSINESS.

**Abandonment.**—In marine insurance, when the person who has insured goods, exercises his right, in certain cases of accident to the ship, of abandoning the property insured to the person or company that granted the insurance, in order that he may claim indemnity for the value of the property.

**Abstract.**—An abridgment or epitome of a deed or document. An epitome is a cutting or lopping applied to a whole throughout, abridging it generally and not in parts only.

**Acceptance.—Acceptor.**—See BILL.

**Accommodation Bill.**—A bill not representing any trade transaction, but merely concocted between two or more parties, with a view to its being discounted, for the temporary accommodation of either the drawer, acceptor, or indorsers, or, frequently, for all; the several parties agreeing to provide the acceptor, at or previous to its due date, with the portion for which they have received the discounter's money.

**Account.**—A statement showing the several sums and amount due by one person to another for goods, cash, &c., or arising out of any mutual transactions. Accounts are kept under their respective heads in the ledger, from which they are copied when the account is to be sent in or is asked for.

When invoices giving the particulars and items were either sent with the goods, or by mail, or messenger, it is not necessary to repeat the particulars of the entries in the account, but only the dates and sums need be given.

When no invoice was sent, all the particulars must be given. These particulars must be copied from the day-book, as the ledger contains only the amount of each entry.

If the account has to be sent again, it is only necessary to give the date when sent, or of the last entry, with the words "Account rendered" or "To bill delivered," and the total amount.

**Account Current.**—A statement of the transactions that have taken place between two parties during a certain time, drawn out in Dr. and Cr. columns, in the order of their dates. An *Account current* is usually sent in at the end of any adventure, or series of transactions, and in a general way at stated periods, yearly, half-yearly, or quarterly. Interest is frequently charged or allowed upon each item.

**Account Sales.**—An account drawn out by a commission agent or broker, showing the sales he has made of goods on account of another; also an account rendered by a merchant to the consignor of goods. It states the weights or quantities sold, and the prices at which they were sold with the total amount due to the owner after deducting the charges for freight, cartage, advertising, &c., and the agent's commission.

An "*Account Sales Book*" is generally used for entering sales of goods on commission.

**Acquittance.**—A discharge in writing for money, debt or liability.

**Actuary.**—One who makes the calculations for a Life Assurance company, and advises on all matters relating to its finances and statistics.

**Adjustment.**—In marine insurance when the insured party agrees to accept certain terms for the loss incurred, and the insurer writes on the policy—"adjust this loss at — per cent., payable,"—naming the rate per cent. and time for payment.

**Adjustment of an Account.**—Is the agreeing to, or arranging the particulars of a faulty or disputed account.

**Ad Valorem Duty.**—Duty levied on goods according to their value, and not on the quantity, or by their weight or measure.

**Administrator.**—A person legally authorized to take charge of the estate of a deceased individual, dying without a will, or when a named executor refuses to act.

**Advances.**—Money advanced by merchants and agents on goods which they are commissioned to sell. Loans of money are

often termed advances. Also, additional price or profit, as, an *advance* on the former price.

**Adventure.**—A term applied to shipments of goods on the merchant's own account, to or from some foreign market. Thus, if a merchant shipped goods to Jamaica, an account would be kept in the ledger under the head "Adventure to Jamaica," stating the proceeds and expenses, and showing how much was gained or lost by the transaction.

**Bill of Adventure.**—A writing signed by a person who takes goods on board of his ship wholly at the risk or the owner.

**Advice or Advices.**—Mercantile information sent by letter, which is called the "*Letter of Advice.*"

**Agent or Factor.**—A mercantile agent who buys and sells goods and transacts business for others on commission. He may be a home factor or a foreign factor. He may buy and sell in his own name, and is entrusted with the possession and control of the goods; and in these respects he differs from a broker.

**Agencies, Mercantile.**—Places to which bankers and merchants refer to ascertain the credit and particulars relating to dealers in town and country.

**Agio** (*âd'-ge-o*, Italian).—The difference in value between bank notes and metalic money in Venice and Holland, formerly, but now applied to other countries; also, between one sort of money and another.

### Agreement for the Sale of Land.

AGREEMENT made and entered into the Twelfth day of May, 18—, between Walter Graham, of Kinney, County of Hudson, and State of New Jersey, and Henry Kerr, of Kinney, County of Hudson, State of New Jersey, Witnesseth, that the said Graham, in consideration of the sum of five hundred dollars now paid and the further sum of fifteen hundred dollars to be paid when a deed is executed, doth grant, bargain and sell unto said Kerr, his heirs, and assigns, all that piece of ground situate, etc. (*describing the premises*) together with all and singular appurtenances thereunto belonging or in any wise appertaining.

And the said parties bind themselves, their heirs, executors and administrators, for the performance of all and every part of the above agreement; as witness their hands and seals, day and year above-written.

*Signed, sealed and delivered in presence of*

WM. KERBY
JNO. JOHNSON

WALTER GRAHAM. L. S.
HENRY KERR. L. S.

Received, May 12th, 18—, of HENRY KERR, five hundred dollars, the first payment above-mentioned,

WALTER GRAHAM.

## Agreement for the Sale of Grain.

*It is agreed*, this first day of June, 18—, by and between Wm. Morris of Aberdeen, County of Harford and State of Maryland, and Bromwell Bros., of Baltimore city, State of Maryland, as follows: The said Bromwell Bros., in consideration of five hundred bushels of wheat, to them this day sold by the said Morris, and by the said Morris agreed to be delivered to them, the said Bromwell Bros. on or before the first day of October next, free of all charges, agree to pay to the said Morris within one month after such delivery the sum of five hundred and seventy-five dollars. And the said Morris, in consideration of the aforesaid agreement of the said Bromwell Bros. doth hereby agree to forward and deliver to the said Bromwell Bros., at Baltimore, aforesaid, free of charge, the said five hundred bushels of wheat, so to them sold as aforesaid, hereby warranting the same to be good, clean and merchantable grain.

Witness our hands and seals, day and year first written.

*Sealed and delivered in presence of*
E. Richardson.
Geo. Rixham.

Wm. Morris. L. S.
Bromwell Bros. L. S.

## Agreement with a Clerk, or Salesman, for services.

*It is agreed*, this first day of January, 18—, between Geo. Blackie & Co. and John Simple, all of the city of New York and State of New York, in manner following, to wit:

That said John Simple covenants and agrees, faithfully and diligently to serve and act as clerk (or salesman) of the said Geo. Blackie & Co. in their store in said city, from the day of the date hereof, for and during the space of one year, if both parties shall so long live, without absenting himself from the same; during which time he, the said John Simple, will in the store of the said Geo. Blackie & Co. faithfully, honestly and diligently attend, doing and performing all matters pertaining to his duties as clerk (or salesman) aforesaid, and in all respects complying with the request and desire of said Geo. Blakie & Co., relative to the discharge of such duties.

In consideration of which services so to be performed by the said Simple, we, the said Geo. Blackie & Co., covenant and agree to allow and pay to the said Simple, the yearly sum of one thousand dollars, by four quarterly payments, or oftener if required; provided, nevertheless, that payment for all time, during which the said Simple may be absent from the store of the said Geo. Blackie & Co., is to be deducted from the sum, otherwise by this agreement due from, and payable by, the said Geo. Blackie & Co. to said Simple.

Witness our hands and seals, day and year first written.

*Signed, sealed and delivered in presence of*
Walter Dorsey.
Robert Michael.

Geo. Blackie & Co. L. S.
John Simple. L. S.

## Agreements between Landlord and Tenant.

### LANDLORD'S AGREEMENT.

This is to certify, That I have Let and Rented unto P. J. Cox, the House and Lot, known as 27 Doolittle street, in the village of Newburgh, New York, for the term of one year, from the first of May, 18—, at the yearly rent of two hundred and fifty dollars, payable quarter yearly.

The premises are not to be used or occupied for any business deemed extra-hazardous on account of fire, nor shall the same, or any part thereof, be let or underlet without the written consent of the Landlord, under the penalty of forfeiture and damages.

Given under my hand and seal the 10th day of June, 18—.

W. H. Webb.

### TENANT'S AGREEMENT.

This is to certify, That I have Hired and Taken from W. H. Webb, of the Village of Newburgh, New York, a House and Lot, known as 27 Doolit-

tle street, in the village of Newburgh, aforesaid, for the term of one year, from the first of May, 18—, at the yearly rent of two hundred and fifty dollars, payable quarter yearly.

And I hereby promise to make punctual payment of the rent in the manner aforesaid, and quit and surrender the premises, at the expiration of said term, in as good state and condition as reasonable use and wear thereof will permit, damages by the elements excepted, and engage not to let or underlet the whole or any part of the said premises, without the written consent of the Landlord, under the penalty of forfeiture and damages; and also not to occupy the said premises for any business deemed extra-hazardous without the like consent, under the like penalty.

Given under my hand and seal the 10th day of April, 18—.

P. J. Cox.

**Surety.**

In Consideration of the letting of the premises above described, and for the sum of one dollar, I hereby become Surety for the punctual payment of the rent, and the performance of the covenants in the above written agreement mentioned, to be paid and performed by P. J. Cox, and if any default shall be made therein, I hereby promise and agree to pay unto W. H. Webb such sum or sums of money as will be sufficient to make up such deficiency and fully satisfy the conditions of the said agreement, without requiring any notice of non-payment or proof of demand being made.

Given under my hand and seal the 10th day of April, 18—.

Wm. Gordon.

**Annuity.**—A payment made yearly or at stated periods.

**Arbitration.**—The settlement of disputed accounts, claims, or other matters, by the decision of one or more persons, having no personal interest in the matter, who are called *arbitrators*, and are authorized by a court of law, or by the parties concerned, to decide the disputed points. One person only may be appointed to arbitrate; but it is usual to choose two or three; or for each party to name one, and these to name a third, who is called the *umpire*. Their determination is called the *award*.

**Arbitration Bond.**—A deed which obliges one to abide by the award of the arbitration.

**Arbitration of Exchanges.**—The calculation of the rate of exchange of the currency between two places, through the currency of intermediate places, in order to ascertain whether it is most profitable to forward drafts or money, directly to the place or indirectly through another place. When one intermediate place only is to be considered it is termed *Simple Arbitration*, but when more are concerned *Compound Arbitration*.

**Assets.**—Cash and property of every description, belonging to a person or firm. Originally it meant goods and chattels sufficient for the discharge of all legal claims, but now merely the ac-

tual property of an individual, in contradistinction to his liabilities.

**Assignee** (*as-se-neé*).—A person to whom an assignment is made. In case of bankruptcy, the court appoints an *Official Assignee* to take charge of the bankrupt's property or estate, as it is termed; and the creditors appoint a *Trade Assignee*, from their own body, to take care of their interests.

**Assignment.**—The appointment of a person to take charge of and manage property; also, the transfer of property of any description, or making over a right or claim to another person, by a legal document which is called a *Deed of Assignment*. The person who makes over the property is commonly called the *Assigner*, but in legal phraseology the *Assignor*.

**Assignment of Bond, Assignor being Liable.**

*For value received*, I do assign and set over the within obligation, and all moneys due thereon, unto John Jones, his executors, administrators and assigns, hereby guaranteeing the payment thereof, in case of default being made by the within named Josiah Hopkins.

Witness my hand and seal this first day of November, 18—.

*Signed, sealed and delivered in presence of*
AUGUSTUS MARSH.
SIMON CLODPOLE.
} R. RAMSAY. L. S.

**Assignment of Account Indorsed thereon.**

*In consideration* of one dollar, value received, I hereby sell and assign to Emmet Jones the within account, which is justly due from the within named Alex. Harris, and I hereby authorize the said Emmet Jones to collect the same. RICHARD SMITH.

NEW YORK, October 2, 18—.

**Attachment.**—A legal process by which an embargo is laid upon money, money due, or goods in possession of other persons who are thereby prohibited from parting with the goods or money, or paying the money due until a claim against the owner is settled. See GARNISHMENT.

The term is also applied to a seizure or taking both of persons or property.

**Attorney, Power of.**—A legal document conveying to a person, usually residing in another country or distant part of the same, authority to act and sign for another person, either in a special case or without reserve. It is sometimes called a *Letter of Attorney*. See PROCURATION.

**Audit.**—A scrutiny of accounts and vouchers by duly authorized persons, called *auditors*.

**Average.**—In shipping transactions, the term *general average* is appiled to the proportionate contribution levied upon the value of a ship and its cargo generally, when part of the sails, masts, &c., or part of the cargo, has been voluntarily sacrificed in a storm, or under peculiar cicumstances in order to save the rest; the loss is distributed amongst the owners of the ship and the various owners of the cargo in fair proportion. This risk is covered by the ordinary insurance policies. If the full value was not insured a proportion according to the amount of insurance is recoverable.

*Particular average* is the term applied to partial damage of the ship alone or part of the cargo alone, arising from the ordinary wear and tear, or from the ordinary mishaps of a voyage, and not involving the general safety of the ship or cargo. Such partial or particular risks are not usually covered by the insurance policies, unless specially provided for. It is usual for the underwriters to except certain goods, by a clause in the policy warranting them *free of particular average*, on account of such goods being very liable to be damaged by sea water, heat, &c. However, when the loss exceeds a certain percentage, or if the ship is stranded, sunk or burnt, partial damage to goods, &c., is recoverable from the underwriters, under an ordinary insurance, notwithstanding the clause. To prevent paltry claims being made, it is customary to warrant a ship, freight, and cargo, free of particular average under 3 per cent.

*Petty averages* are certain small charges, which occur regularly, and are necessarily defrayed by the master in the usual course of the voyage; such as port charges, common pilotage, and the like, which formerly were, and in some cases still are, borne partly by the ship and partly by the cargo.

In the clause commonly found in bills of lading, "primage and *average* accustomed," *average* means a kind of composition established by usage for such charges, which were formerly assessed by way of average.

**Average of Payments.**—Is the method of finding the time when payment of several sums due at different times, may be made at once without loss of interest to either party. To find the average time when all the terms of credit begin at the same time.

*Rule.*—Multiply each amount by its term of credit and divide the sum of the several products by the sum of the debts; the quotient will be the average time of credit.

EXAMPLE.

A merchant purchases goods on May 1st amounting to $750.00; $350.00 payable in 3 months, $250.00 in 6 months, and $150.00 it 8 months. When may the whole be paid without loss to either party?

| | | | |
|---|---|---|---|
| $350 for 3 mos. equals | | | $1050 for 1 month |
| $250 " 6 " | " | | $1500 " " " |
| $150 " 8 " | " | | $1200 " " " |
| $750 | | | )3750(5 mos. average time. |

*Note.*—If the result contains a fraction less than a day reject it. When the cents are less than 50 disregard them, when more call them 100.

To find the average time when the credits begin at different times.

*Rule.*—Find the date when each debt becomes due. Find the time intervening between the earliest of these dates and the date of each succeeding amount. Multiply the amount first due by 0. Multiply each succeeding amount by the time intervening between the earliest date and the time the amount becomes due.

Divide the sum of the products by the sum of the debts; the quotient will be the average time required. Add this average time to the day of maturity of the amount first falling due for the day of payment.

EXAMPLE.

Required the time when the amount of the debts as below stated becomes due per average.

| *Date of Purchase.* | *Amount.* | *Time.* | *When due.* | *Time from.* |
|---|---|---|---|---|
| Jan. 6th | $300 | 6 mos | July 6th | July 6th to Aug. 7th, 32 days. |
| Apl. 10th | 200 | 6 mos | Oct. 10th | |
| May 7th | 400 | 3 mos | Aug. 7th | July 6th to Oct. 10th, 96 days. |

| | *Amount.* | *Time in days.* | |
|---|---|---|---|
| July 6th | $300 | 0 | 0. |
| Aug. 7th | 400 | 32 | 12800. |
| Oct. 10th | 200 | 96 | 19200. |
| | 900 | | )32000(35 5-9 days. |

Ans. 36 days from July 6th is August 11th.

**Bailment.**—A delivery of goods in trust for some special object or purpose, upon a contract, expressed or implied, that the trust shall be faithfully executed.

**Balance.**—the difference of money required to make the Dr. and Cr. sides of an account equal.

**Balance Sheet.**—A paper giving a summary and balance of accounts.

**Balance of Trade.**—The difference in value between the exports and imports of a country, by which also the rates of exchange are much affected.

**Banco.**—A term used to distinguish between the value of money at a bank, and its current value; as, at Hamburg *banco* is worth about 23 1-3 per cent. more than currency.

**Balancing Accounts.**—It is often of advantage to the accountant to find the difference between the sums of the debit and credit

columns of his ledger by addition instead of subtraction. For example, if he wishes to find the difference between 1897 and 682, instead of placing the lesser number under the greater, he will add mentally to 682 such a number as will make the whole equal to 1897, writing the figures as he proceeds under 682.

1897 682

1215—balance.

When each side contains several amounts, first add the greater side in the usual manner, then commence at the top of the columns on the lesser side of the account and add downwards, inserting such figures as may be necessary to make the required balance. To prove its correctness add the whole of the lesser columns including the balance.

*Dr.* EDWARD SHAFFER. *Cr.*

| 18— | | | 18— | | |
|---|---|---|---|---|---|
| Feb. 1. | To Mdse. | 184.50 | Feb. 20. | By Cash | 150.00 |
| " 25 | | 203.10 | Apl. 1. | " " | 240.00 |
| Apl. 10 | | 115.25 | | Balance | 112.85 |
| | | 502.85 | | | 501.85 |

**Bankrupt.**—A trader unable to meet his engagements, who, by his own acts or those of his creditors becomes amenable to the bankruptcy laws.

**Banker.**—A dealer in money, who grants loans, discounts bills and receives deposits at interest; he also receives the deposits of others for safe custody, acts as an agent in their payments and receipts, and facilitates the remittances of money from one place to another.

**Barratry.**—A fradulent breach of duty or wilful act of known illegality on the part of a master of a ship, in his character of master, or of the mariners, to the injury of the owner of the ship or cargo, and without his consent; it includes every breach of trust committed with dishonest views, as running away with the ship, sinking or deserting her, embezzling the cargo, &c.

**Bears and Bulls.**—Cant names for persons engaged in the gambling transactions of the stock exchange. A *Bear* is a speculator who engages to deliver stock or shares which he does not possess, at a stated price, at a stated time, calculating that a *fall* in the market price will take place before the settling day, when he will be ablo to buy them at a lower price than he has agreed to deliver them at. A *Bull* is a speculator who purchases stock

or shares, which he does not intend to take up, to be delivered at a stated price, at a stated time, calculating that a *rise* in the market price will take place before the settling day, which will enable him to sell them at a profit. Hence, in the intervening time, it is the interest of the former to depress stocks, as the bear pulls down with his strong paws, and of the latter to raise stocks, as the bull throws upward with his horns. The stock is, in fact, never delivered, and was never meant to be. When the time for delivery arrives, the losing party pays the *difference* between the price of the stock *then*, and at the time when the contract was made.

**Bill of Entry.**—A written account of goods entered at the Custom House, whether imported or intended for exportation.

**Bill of Exchange** is a written order or request from one person to another, desiring the latter to pay to some person designated, a certain sum of money therein named on a certain day. It generally is, and, to be negotiable, must be, made payable to order or to bearer, and it also states that it is given for "value received." The person who draws the bill is called the *Drawer*, the person on whom it is drawn is, before acceptance, called the *Drawee;* he *accepts* it by writing his name either below that of the *Drawer*, or, more commonly, across the face of the bill; he is then termed the *acceptor* of the bill, which is often called an *acceptance;* the person to whom the money is directed to be paid is called the *Payee*. The person making the order himself may be the *Payee*. The bill itself is frequently called a *Draft*. The banking house or place where the bill is made payable is also generally stated by the *Acceptor*. Any person into whose hands it may come is called the *Holder*. Now, if the drawer of the bill wishes to make use of it, he indorses the bill—that is, writes his name *across* the back of it—and thus it becomes negotiable paper, and may be paid away to a third party; and this *holder* indorsing it below the other's name, may pay it away to a fourth, and so on; the person to whom he makes it payable is called the *Indorsee*. Thus the bill may be transferred an indefinite number of times, each time liquidating a debt to the amount for which it is drawn, till the day of payment by the acceptor arrives, when it is duly presented by the last holder. Instead of being thus "*paid away*," the bill may at any period be *discounted* by a banker or bill-broker, who will give the money for it, less a certain sum for *interest*.

### An Inland Bill of Exchange.

$963 83-100. CINCINNATTI, Oct. 10, 18—.

Sixty days after sight, pay to the order of Messrs. Bulinger & Co. the sum of nine hundred and sixty-three, 83-100 dollars, value received, and charge the same to the account of JAMES ELLIS.

To Messrs. HOWES & MACY, Broadway, New York.

This is accepted by the drawee's writing across the face,

*Accepted Oct.* 20, 18—. *Payable at the Park Bank.*

HOWES & MACY.

### Set of Foreign Bills of Exchange.

£100. No. 350. NEW YORK, Feb. 10, 18—.

Thirty days after sight of this, my first of exchange (second and third of same tenor and date not paid), pay to the order of Francis Waters, one hundred pounds, value received (with current rate of exchange), and charge the same without further advice to SMITH & Co.

To Messrs. KEMP, CASH & Co., London

£100. No. 350.

Thirty days after sight of this, my second of exchange (first and third of same tenor and date not paid), pay to the order of Francis Waters, one hundred pounds sterling, and charge the same without further advice to

To Messrs. KEMP, CASH & Co., London. SMITH & Co.

£100. No. 350.

Thirty days after sight of this, my third of exchange (first and second of the same tenor and date not paid), pay to the order of Francis Waters, one hundred pounds sterling, and charge the same without further advice to

To Messrs. KEMP, CASH & Co., London. SMITH & Co.

All foreign bills must be indorsed in full, thus:

*Pay to the Oriental Bank or order, value received.*

J. M. STEWART.

All bills, except *Prommissory Notes* require to be presented for payment on the exact day they become due—that is, on the *last day of grace*, which see; if not presented, they lose the peculiar privileges of bills, and become mere evidences of debt. When a bill is not duly paid on presentation, it is said to be *dishonored*, and is taken to a *Notary Public*, who again presents it, when, if not paid, he *notes* its non-payment, and afterwards draws out a formal *protest*, that *legal* proceedings may be taken for recovering the amount. A bill *may* be passed from hand to hand without any of the persons indorsing it, in which case none of them are liable to the last holder if it should be dishonored. Any material alteration of a bill after it has been drawn or accepted, makes it useless. A bill is *renewed* when a creditor receives a new bill instead of payment.

Bills are sometimes drawn *at sight*, or at so many days *after sight*. A bill of this kind is usually drawn by a person residing at a distance from his debtor; and he sends it to the debtor to be *sighted*, which consists in his *accepting* it by signing his name, and adding the day on which he has done so. Is is now negotia-

ble, and on the third day after the time named for payment it is presented.

Foreign bills of exchange are drawn at so many days after sight; and are of exactly of the same nature as the ordinary bills, but for the sake of security in transmission, they are drawn in sets of three, two of which are sent by different mails, and on payment of one the others become void. The third bill of the same tenor is retained by the drawer or holder, until he learn whether the first or the second has been received; and if both have been lost, it is sent. Such bills are seldom sent by the actual drawer, but are usually paid away or sold on the spot to another party, who transmits them to a creditor of his own, who obtains the payments.

A bill of exchange puts a debt in a tangible form; thus, instead of leaving a debt to be paid at an indefinite period, if it be put in the form of a bill, the creditor possesses the power to compel payment very soon after the time named, by legal process, without the delay of an ordinary suit at law, unless the bill has been fraudulently or falsely obtained, in which case an application must be made to a judge, who can stay the process.

### Promissory Notes—Note on Demand.

$600. NEW YORK, Nov. 2, 18—

On demand I promise to pay to John Flin, or order, six hundred dollars, value received. BENJ. SMITH.

### Note on Time.

$275 55-100 NEW YORK, Nov. 2, 18—

Ninety days after date we promise to pay to Eli Josking, or order, two hundred and seventy-five and 55-100 dollars, value received.

GOODSELL & BAREUM.

### Note not Negotiable.

$150 62-100 NEW YORK, Nov. 10, 18—

Thirty days after date I promise to pay to William Cannon one hundred and fifty and 62-100 dollars, value received.

THOMAS CAUTIOUS.

### Form of Judgment Note.

$900.00

For value received I promise to pay to Henry James, or order, the sum of nine hundred dollars, ninety days after date, and I hereby nominate, constitute, and appoint the said Henry James, or any attorney-at-law of this State, my true and lawful attorney irrevocable, for me, and in my name, to appear in any Court of Record of this State, at any time after the above Promissory Note becomes due, and to waive all process and service thereof, and to confess judgment in favor of the holder hereof for the sum that may be due and owing hereon, with interests and costs, and waiving all errors, &c.

In Witness whereof, I have hereunto set my hand and seal at the city of Cincinnati, State of Ohio, this 10th day of May, one thousand eight hundred and seventy-three.

Sealed and delivered in the presence of } T. C. SPENCER. L. S.
C. L. SOPER.
JAMES O'NEIL.

**Due Bill.**

$25.00 NEW YORK, Nov. 12, 18—
Due Charles Merritt Twenty-five dollars on demand, value received. JOHN SMART.

**Negotiable Note Payable in Merchandise.**

$300.00 BOSTON, May 28, 18—
Thirty days after date, for value received, I promise to pay to Henry Jackson, or order, three hundred dollars in merchantable corn, at the current price. JOSEPH JOHNSON.

A note on demand is due at any time when demanded. A note payable to S. H., or order, may be sold or negotiated if S. H. writes his name upon the back; and if payable to S. H., or bearer, it can be sold without being indorsed, and will be good to the holder. In the State of Pensylvania the words "without defalcation" are inserted after dollars. When two or more persons sign a note "severally and jointly," they are each responsible for its payment. The words "value received" should be written on a note to make it valid.

A person indorsing a note, or writing his name across the back, becomes responsible for its payment. If, however, the person thus indorsing is not notified when the note becomes due, of its non-payment by the drawer, he can no longer be held responsible for its payment. A partial payment of a note should always be indorsed on the same.

The principal difference between a sealed note and one without a seal, is that the former must be first paid in the settlement of a decendent's estate, and is not barred by the statue of limitation.

*A Promissory Note* is a written promise to pay to some person named, and at a time specified therein, a certain sum of money. It is frequently called a *note of hand.* It is subject to the same laws, and may be transferred by indorsement in the same way as an *acceptance.*. It is complete in itself, not requiring to be *accepted* by another person, and consequently only one person is responsible for the payment to its holder; whereas the amount of an *acceptance* may be recovered from the *drawer* if the *acceptor* should not be found, or otherwise not be made to pay it.

**Bill of Lading.**—A receipt, usually a printed form filled up with writing, given by the master of a vessel for goods that have been shipped with him, and agreement as to their delivery, freight, &c. It states the number or quality of the bales, &c., with their brands or marks. Four or more copies are filled up, one for the

master; another is reserved by the shipper of the goods as "proof of interest" in case any claim should be made against the underwriters; a third is sent in a letter by the ship; and the fourth by the next mail, in case of the preceding not reaching the consignee. The shipper gives the person to whom he sends the bill the right to receive the goods. A bill of lading, like a bill of exchange, may be transferred by indorsing or writing the name of another person on the back of it, who thus acquires the right to the goods. When one of the bills has been used the others become void. The master usually makes certain exceptions in writing; as, "*contents unkown*" of dry goods in bales, &c.; "*weight unknown*" of loose goods; "*not accountable for leakage or breakage*" of liquids in bottles; "*not accountable for leakage*" of liquids in casks, and "*pieces in dispute;*" if the skipper's list of articles differs from the ship's account. The master also makes notes of any goods which seem to be in bad order or condition, lest he should be compelled to make good or pay for any defect, as the bill of lading begins by stating them to be "shipped in good order and well-conditioned."

### Form of Bill of Lading.

SHIPPED, in good order and well-conditioned, by Rawlinson and Co., in and upon the good ship called the Neptune, whereof is Master, for this present voyage, George Thornton, and now at anchor in this port, and bound for Singapore,

| | | |
|---|---|---|
| C.E. | | |
| | 1 to 10 | Ten hogsheads beer, |
| R. & Co. | 16 to 18 | Three casks brandy, |

being marked and numbered as in the margin, and are to be delivered in the like good order and well-conditioned, at the aforesaid port of Singapore (the act of God, fire, and all and every other dangers and accidents of the seas, rivers, and navigation, of whatever nature and kind soever, excepted), unto Arthur Wilkinson, or to his assigns, freight for the said goods being paid here, with primage and average accustomed. In witness whereof I, the said master of the said ship, have affirmed to three bills of lading, all of this tenor and date; the one of which three bills being accomplished the other two to stand void.

Dated in New York, 31st March, 18—

GEORGE THORNTON.

Contents and weight unknown, and not accountable for leakage or breakage.

**Bill of Parcels.**—A list of goods that have been sold, with their prices, sent by the seller to the buyer. It is nearly the same as an *Invoice*, and that term or *Account* is now generally used instead.

### Bill of Parcels.

NEW YORK, May 10, 18—

Messrs. WATERS & SONS,

Bought of D. APPLETON & Co.

| | | | | |
|---|---|---|---|---|
| 2 | Doz. | Ready Reckoner | $2 00 per doz. | $4.00 |
| 6 | " | Song Books (cloth) | 3.00 " | 18.00 |
| ½ | " | Hand Books | 6.00 " | 3.00 |
| 5 | " | National Copy Books | 1.25 " | 6.25 |
| 1 | Gross | Paper Pass Books | | 2.63 |
| ¼ | " | Leather Memorandums, 8vo | 16.50 per gross | 8 25 |
| ⅓ | " | Eagle Playing Cards | 40.00 " | 13 34 |
| 1 | Ream | Fancy Note Paper | | 3.50 |
| | | | | $54.97 |

**Bill of Sale.**—A legal document conveying or transferring the right to certain goods, &c., from one person to another.

### Bill of Sale.

*Know all men by these presents*, that I, Wm. Hart, of Athens, County of Henderson and State of Texas, in consideration of three hundred dollars, to me paid by George Boyd of the same place, have bargained and sold to the said George Boyd the following goods and chattels, to wit: two mules, one wagon and four cows. In witness whereof I have hereunto set my hand and seal, this third day of August, 18—

*Signed, sealed and delivered in presence of*
THOMAS SMOLLET.
JOHN BLUEBOTTLE.

WILLIAM HART. L. S.

**Bill of Sight.**—A form of entry made at the Custom House when the importer of goods or the person to whom they are consigned, does not know the exact description or quantity, by which form they are permitted to be landed for his examination or "sighting," and he then makes a correct form of entry for the goods.

**Bond.**—A legal document by which a person binds himself to pay a certain sum at a stated time, or to perform a contract.

### General Form of a Bond.

*Know all men by these presents*, that I, Robert Smith of Oxford, County of Benton, and State of Alabama, am held and firmly bound unto Josiah Fielding, of the same place, in the sum of two thousand dollars, lawful money of the United States, to be paid to the said Josiah Fielding, his certain attorney, executors, administrators or assigns; to which payment well and truly to be made, I do bind myself, my heirs, executors and administrators, firmly by these presents; sealed with my seal, and dated this first day of march, one thousand eight hundred and seventy-three. The condition of this obligation is such that if the above bounden Robert Smith, his heirs, executors, administrators, or any of them, shall and do well and truly pay, or cause to be paid, unto the aforesaid Josiah Fielding, his executors, administrators or assigns, the full and just sum of one thousand dollars, lawful money as aforesaid, with legal interest on the same, on or before the first day of July next, without fraud or further delay, then this obligation to be void and of none effect; otherwise to be and remain in full force and virtue.

*Signed, sealed and delivered in presence of*
JOHN WALTERS.
HENRY MORR.

ROBERT SMITH. L. S.

**Bonded Goods.**—Imported goods liable to duties, left in charge of the officers of the customs, for the duties on which bonds are given at the Custom House; and they are then deposited in government warehouses, where they remain until the duties are paid. The goods are said to be *In Bond.*

**Bond-Creditor.**—A creditor whose debt is secured by a bond.

**Bond-Debt.**—A debt contracted under the obligation of a bond.

**Bonus.**—An extra dividend to the shareholders of a joint stock company, out of accumulated profits; also applied to periodical additions made to policies of life assurance, out of the general profits.

**Book Debts.**—The debts owing to a trader, as shown by his books, and usually classed as *good*, *doubtful*, or *bad* debts.

**Bottomry.**—A contract by which the owner of a ship, or the master as his agent, hypothecates and binds the ship as security for the repayment of money advanced or lent for the use of the ship, such as repairing her, fitting her out for the voyage, procuring a cargo, etc., if she terminates her voyage successfully. If the ship is lost, the lender loses the money; but if the ship arrives safe, he is to receive the money lent, with the interest or premium stipulated. The tackle of the ship, also, is answerable for the debt, as well as the person of the borrower. The deed is called a Bottomry Bond.

**Broker.**—An agent employed to effect bargains and contracts, as a middleman or negotiator, between other persons, for a compensation or percentage, commonly called *Brokerage.* He takes no possession, as broker, of the subject matter of the negotiation. He generally contracts in the names of those who employ him, and not in his own. The principal are *Bill Brokers*, who buy and sell notes and bills of exchange; *Exchange Brokers*, who buy and sell uncurrent money, and deal in exchanges relating to money; *Insurance Brokers*, who are agents in procuring insurance on vessels, or against fire; *Produce Merchandise Brokers*, who buy and sell goods; *Ship Brokers*, who deal in buying and selling ships, procuring freight, etc.; and *Stock Brokers*, who deal in stocks of moneyed corporations and other securities.

**Broker's Contracts.**—A paper signed by the broker, and sent

to the person for whom he has bought or sold goods, immediately upon completing the bargain, describing the goods and the price, and conditions upon which they were bought or sold.

**Bulk.**—In a mass, or solid state, as pork *in bulk*, or *bulk pork*, pork not cut up or prepared for packing. *Laden* or *stowed in bulk* is having the cargo loose in the hold, or not inclosed in boxes, bales, or casks. *Sale by bulk* is a sale of goods as they are, without weight or measure. *To break bulk* is to begin to unload.

**Bullion.**—Properly, the precious metals are called *bullion* when smelted and not perfectly refined, or when refined, but in bars, ingots, or in any form uncoined, as in plate. But the word is generally used in commerce to denote gold and silver, both coined and uncoined, when reckoned by weight and in mass.

**Capital.**—The net amount of property belonging to a public company or trader, after deducting the debts owing. The term, however, is more correctly applied, either to the sum of money with which the business was commenced, or to the available sum which is afterwards at command for carrying it on.

**Cargo.**—The lading or freight of a ship, goods, merchandise, or whatever is conveyed in it. The term does not apply to live animals or persons.

**Cash Account.**—In book-keeping, an account to which nothing but cash is carried, and from which disbursements are deducted.

In banking, an account of advances made by a banker to an individual who has given security for their repayment.

**Cash Credit.**—The privilege of drawing money from a bank, obtained by personal or deposited security.

**Cashier.**—One who has charge of money; the clerk who superintends the books, payments, and receipts of a bank or company.

**Charter-Party.**—An agreement in writing respecting the hire of the whole or a part of a vessel, made between the owner or master and the freighter, on a determined voyage, and under certain specified conditions. No exact form of words is absolutely necessary, or could be used, as the purposes of such parties must vary considerably. Two copies are drawn out and signed by both the owner or master, as his agent, and the *charterer* or hirer, each party having one.

**Check.**—An order on a bank or banker for a sum of money payable on demand to a person named, or to his order, or to bearer. Checks should be presented as soon as received; if detained after the date drawn, and the banker fail, the amount cannot be recovered from the drawer of the check. The holder must be identified by the teller when presenting a check payable to order, as the person indorsing it. This inconvenience can be obviated by the drawer's writing beneath the indorser's name on the back, *Indorsement correct, Bush & Co.* The teller may also certify the check, which means that the bank has sufficient money belonging to the drawer to meet it; it can then be used as cash, providing the bank's credit is good. A certified check is at once charged against the account of the drawer. A check deposited by a dealer and returned through the clearing house as *not good*, or *no funds*, is at once charged against the depositor's account. Checks intended for payment of notes or drafts, placed in bank for collection, must be certified.

**Circular Note.**—A bill or note issued by bankers for the convenience of travellers, who can get it cashed at any one of the various places named.

**Clearing a Vessel.**—To clear a ship at the Custom House is to exhibit the documents required by law, give bonds, or perform other acts requisite, and procure a permission to sail, and such papers as the law requires.

**Clearing.**—In banking is a method adopted by banks and bankers for making exchanges of checks and settling balances at a place called the *Clearing House*, where a clerk from each bank attends every day, and balance sheets are made; by which method the transferring of a large amount of money backwards and forwards from bank to bank is obviated.

**C. O. D.**—Collect upon delivery. Goods sent by express, marked in this manner, must be paid for when delivered, or they will be returned to the sender.

**Collateral Security.**—Secondary security for the performance of covenants, or the payment of money, besides the principal security. It is generally applied to the deposit of deeds or documents conveying the right to property which may be made available if the chief security fails.

**Commission.**—A charge of so much per cent. upon the amount

of goods bought or sold, or upon transacting or negotiating business of any kind, by an agent for another.

**Commissioner.**—A person who has a commission or warrant from proper authority, to perform some office, or execute some business, for the person or government which employs him; as, commissioners for adjusting claims.

**Commission Merchant.**—A merchant who transacts business on commission, as the agent of others, receiving a rate per cent. as his commission.

**Compound Interest.**—Compound interest is on both principal and interest. To compute compound interest:

*Rule.*—Find the interest on the given principal to time the interest becomes due, and add the principal. Then find the interest on this amount for the next period, and add as before, and so continue for each successive period to the time of settlement. Subtract the given principal from the last amount, and the remainder will be compound interest.

EXAMPLE.

What is the compound interest on $1.000 for 4 years, at 6 per cent.?

| | |
|---|---|
| Given principal | $1,000 |
| | .06 |
| Interest for 1st year | 60.00 |
| | 1000.00 |
| Principal for 2d year | 1060.00 |
| | .06 |
| Interest for 2d year | 63.6000 |
| | 1060.00 |
| Principal for 3d year | 1123.60 |
| | .06 |
| Interest for 3d year | 67.4160 |
| | 1123.60 |
| Principal for 4th year | 1191.0160 |
| | .06 |
| Interest for 4th year | 71.460960 |
| | 1191.0160 |
| | 1262.476960 |
| Given principal | 1000. |
| Compound interest for 4 years | $262.476960 |

**Composition.**—A payment of so much on the dollar by a debtor to his creditors on their agreeing to accept that sum by way of composition for the full amount of the debts, and giving an acquittance for the whole; which act is called *compounding* or *compromising* with creditors, and saves the expense and publicity of bankruptcy.

**Conditions of Sale.**—The terms upon which it is proposed to sell property at auction; also the writing containing or expressing these terms.

**Consignee** (*con-si neé*).—The person to whom goods or other things are delivered in trust, for sale or superintendence. The thing consigned is termed the *consignment*, and the person who consigns it, the *consignor*, written also *consign'er*.

**Consul.**—A person commissioned to reside in a foreign country as an agent or representative of a Government to protect the rights, commerce, merchants, and seamen of the state, and to aid in any commercial, and sometimes diplomatic, transactions with such foreign country.

A *Consul-General* is a consul having jurisdiction in several places or over several consuls.

**Consulage.**—A duty or tax paid by merchants for the protection of their commerce in a foreign place.

**Contraband.**—Prohibited merchandise or traffic. It is frequently applied to smuggling.

*Contraband of War* is applied to goods which neutrals are prohibited from carrying during war to the belligerent parties, or which a belligerent has, by the law of nations, the right of preventing a neutral from furnishing to an enemy, and which is liable to seizure and confiscation, as warlike munitions, &c.

**Contract.**—An agreement between two or more persons, upon a sufficient consideration or cause, to do, or to abstain from doing, some act; as, *to contract* or *a contract* for carrying the mails, supplying an army with cattle, buying certain goods, &c. Also, the formal writing which contains the agreement of the parties, with the terms and conditions, and which serve as a proof of the obligation. Each of the parties is a *contractor*, but that term is generally applied as below, and the persons named are styled the *contracting parties*.

**Contractor.**—Specifically one who contracts or engages to perform any work or service for the public, or to supply certain quantities of goods or materials at a certain price or rate.

### Contract for Building.

*Contract for Building*, made the day of one thousand eight hundred and by and between of the second part, in these words: the said party of the second part covenant and agree to and with the said party of the second part, to make,

erect, build, and finish, in a good, substantial, and workmanlike manner, on the agreeable to the draft, plan, and explanation hereunto annexed, of good and substantial materials, by the day of next. And the party of the first part covenants and agrees to pay unto the said party of the second part, for the same the sum of lawful money of the United States, as follows: the sum of

and for the true and faithful performance of all and every of the covenants and agreements above mentioned the parties to these presents bind themselves each unto the other in the penal sum of dollars, as fixed and settled damages to be paid by the failing party.

In witness whereof, the parties to these presents have hereunto set their hands and seals the day and year above written.

*Sealed and delivered in the presence of*

**Conveyance.**—An instrument in writing by which property, or the title to property, is conveyed or transmitted from one person to another.

**Conveyancer.**—One who employs himself in drawing up and preparing convenances of property.

**Coupons** (*koó-pong*).—Certificates of interest due, printed at the bottom of Government or other bonds, given for a term of years, designed to be cut off and presented for payment as the interest becomes due.

**Credit.**—Mercantile reputation entitling to be trusted, or to receive goods or loans on promise of after payment, applied to individuals, firms, corporations, companies and governments, which are thus said to be in good or bad credit.

In book-keeping the side of an account on which are entered all items reckoned as values received or transferred from the party or category (as cash, bills receivable, &c.), named at the head of the account; also, any one, or the sum of these items. *To credit* a person is to enter his name in your books, as "*Cr. by*" the cash, goods, &c., you have received from him.

**Creditor.**—One to whom money is due. Opposed to *debtor*. When you receive goods from a person without paying for them at the time, he is said to be your creditor to the amount; and when you pay him money or bills you are his creditor that is, you are credited by him for that amount.

In book-keeping by double entry the entries, instead of being only posted to the *Dr.* and *Cr.* side, are entered twice, being first posted to the *Cr.* side of one set of accounts, and then a second time to the *Dr.* side of another set of accounts.

In the cash book or ledger, the right-hand side—that is, the side opposite to your right hand—is called the *Cr.* side.

**Currency.**—Coin, notes or other media which are in circulation, or given and taken as having value, for the exchange of commodities, or as representing property.

**Customs and Excise.**—Duties levied to provide revenue for a country. *Customs* are duties imposed on commodities on their being imported into, or exported from the country. *Excise* duties are those imposed upon goods and articles at the period of their manufacture in the country, and thus operate as indirect taxes upon the consumer; also a tax levied on licenses to pursue certain trades, and deal in certain commodities.

**Days of Grace.**—Days allowed by law or custom for the payment of a note or bill of exchange, except those payable on demand or at sight, after the specified day of payment; thus, when three days of grace are allowed, a note or bill due on the seventh of the month is payable on the tenth. It is presented on the last day of grace. If the day on which a bill falls due happens to be a Sunday or a bank holiday, the bill is payable the day previous.

The number varies according to the usage of the place where the bill is made payable. In the United States *three* are allowed.

The following are the number of days allowed at the respective places:

| | | | |
|---|---|---|---|
| Amsterdam | 0 | Leipsic | 0 |
| Antwerp | 0 | Lisbon and Oporto { Local | 15 |
| Altona | 12 | Lisbon and Oporto { Foreign | 6 |
| Bahia | 15 | Madrid | 14 |
| Barcelona | 14 | Malta | 13 |
| Berlin | 3 | Naples | 0 |
| Bilboa | 14 | New York | 3 |
| Cadiz | 6 | Paris and the whole of France | 0 |
| Dantzic | 10 | Rio de Janeiro | 15 |
| Frankfort-on-the-Main | 4 | Rotterdam | 0 |
| Geneva | 5 | St. Petersburg { after date | 10 |
| Genoa | 0 | St. Petersburg { " sight | 0 |
| Great Britain | 3 | St. Petersburg { at " | 3 |
| Gibaraltar | 14 | Trieste | 3 |
| Hamburg | 12 | Venice | 6 |
| Leghorn | 0 | Vienna | 3 |

**Debenture.**—A Custom House certificate entitling an exporter of imported goods to a drawback of duties paid on their importation.

Also, a certificate of mortgage or loan on railway or other public works, giving authority to seize the works if the conditions named are not carried out.

**Debit.**—An entry to the *Dr.* or debtor side of an account. *To debit* a person is to enter his name in your books as "*Dr. to*" the goods, cash, &c., he has received from you.

**Debtor.**—One who owes money—opposed to *creditor*. When a person who receives goods from you without paying for them at the time, he is said to be your debtor to the amount, and when a person to whom you owe money receives your money or bills from you he is also said to be your debtor to the amount.

In book-keeping by double entry, all the entries are first posted to the *Dr.* side of one set of accounts, as in single entry, are then posted a second time to the *Cr.* of another set of accounts. In the cash book or ledger, the left hand side, that is, the side opposite to your left hand, is called the *Dr.* side.

**Deed.**—A sealed instrument in writing, upon paper or parchment, duly executed and delivered, containing some transfer, bargain, or contract.

A *document* is an original or official paper relied upon as the proof or support of anything else.

### Short Form of Deed.

*Know all men by these presents*, that I, Abram King, of Hudson, County of Morris, and State of New Jersey, for and in consideration of the sum of fifteen hundred dollars to me paid by Benjamin Thornton, of Arlington, County of Hudson, and State aforesaid, the receipt whereof is hereby acknowledged, do give, grant, sell and convey unto the said Benjamin Thornton, all that (*describe the premises*); to have and to hold the same to the said Thornton, his heirs, and assigns, to his and their use for ever. And I, the said Abram King, covenant with the said Thornton, his heirs and assigns, that I am lawfully seized in fee of the premises; that they are free from all encumbrances; that I have a good right to sell the same as aforesaid; and that I will warrant and defend the same to the said Thornton, his heirs and assigns, against the lawful claims and demands of all persons.

In testimony whereof I, the said Abram King, have hereunto set my hand and seal, this tenth day of November, 18—

*Signed, sealed and delivered in the presence of*
JOHN RANDOM.
PETER WISEACRE.

ABRAM KING. L. S.

The foregoing short form of deed is to be accompanied by an acknowledgment before a magistrate, which is as follows:

### Acknowledgment of Deed.

MORRIS COUNTY ss.

Before me, the subscriber, one of the Justices of the Peace, within and for the said County, personally appeared the above mentioned Abram King, who, in due form of law, acknowledged that he did sign and seal the above indenture as his free act and deed.

In witness whereof I have hereunto set my hand and seal, this tenth day of November, 18—

JOHN KEWEB, Justice of the Peace.

**Del Credere.**—An agreement by which an agent or factor, in consideration of an additional premium or commission, called a *del credere* commission, engages when he sells goods on credit, to insure, warrant, or guarantee to his principal the solvency of the purchaser, the true engagement of the factor being to pay the debt himself if it is not punctually discharged by the buyer.

**Demurrage.**—Payment made to the owners of a ship for the detention of a vessel by the freighter beyond the time allowed by her charter party for loading, unloading, or sailing. The term is also applied to land carriage, by wagons, railways, &c.

**Deposit.**—A sum of money left with a bank or banker, subject to order, for a fixed period at interest. The account is called a *Deposit Account* as distinguished from a *Current Account.*

**Derelict.**—A ship voluntarily abandoned at sea.

**Deviation.**—The voluntary departure of a ship, without necessity, from the regular and usual course of the specific voyage issued; or sailing before or after the period in which she was engaged to leave, thus releasing the underwriters from their responsibility.

**Director.**—One of a body of persons appointed to manage the affairs of a company or corporation.

**Discount.**—A deduction from, or abatement of, a sum of money forming the object of a business transaction; or allowance made for any reason upon an account, debt, demand, price asked, &c. Thus, a person who owes an account of $100, on settling it may receive an allowance of 10 per cent.; and would therefore pay only $90.

Also, a deduction made for interest, in advancing money upon a bill or note not due; or payment in advance of interest upon money lent. It is equal to the interest which would be acquired at the given rate for the given time, either by the whole sum specified to be paid, or by that sum after it is itself deducted; in the former case it is called *Bank Discount.* *To discount* signifies to lend money upon bills or notes, after deducting the *discount* or interest.

**Discounting Bills of Merchandise.**—In making discounts on goods sold, losses sometimes occur when they are not suspected. If an article is sold at a profit of 25 per cent. and 5 per cent. deducted from the selling price it is not 20 per cent., but 18 3-4 per

cent., because the discount is calculated on the selling price, while the profit is calculated on the cost.

So also if 25 per cent. be added and 20 per cent. be deducted, the apparent profit is 5 per cent., when in reality the goods are sold for cost.

EXAMPLE.

| | | | |
|---|---|---|---|
| Cost | $100.00 | Cost | $100.00 |
| 25 per cent. | 25.00 | 25 per cent. | 25.00 |
| Selling price | 125.00 | Selling price | 125.00 |
| Less 5 per cent. | 6.25 | Less 20 per cent. | 25.00 |
| Cash price | 118.75 | Cash price | 100.00 same as cost. |
| Cost | 100.00 | | |
| | 18.75 | Net profit—18 ¾ per cent. | |

TO SELL AT COST.

*Rule.*—Multiply the cost by 100 and divide the product by 100, less the rate per cent. to be deducted

Bought goods for $160.00, for how much shall I sell them to deduct 40 per cent. and yet obtain what they cost?

160 by 100 equals 16000. 16000 divided by 60 equals $266.67. Answer.

PROOF.

| Selling price. | Discount. |
|---|---|
| 266.67 by 40 per cent. equals | 106.67 |
| Selling price. | Discount |
| 266.67— | 106 67 equals 160.00 cost. |

**Dividend.**—A term applied to the profits divided among the shareholders of Joint Stock Companies, &c.

**Document Bills.**—Bills with shipping documents for goods attached to them, given as collateral security available if the bill should not be duly honored.

**Draft.**—A term frequently applied to checks and bills. Also, an allowance or deduction made from the gross weight of certain kinds of goods.

**Drawback.**—A certain amount of duties or customs, sometimes the whole and sometimes only a part remitted or paid back by the Government, upon the exportation of excisable articles upon which they were levied, or upon the re-exportation of foreign goods upon which duty has been paid. This repayment is made to enable the exporter to sell his goods in the foreign market unburdened with duties.

**Dunnage.**—Fagots, boughs, or loose materials of any kind, laid on the bottom of a ship to raise heavy goods above the bottom to prevent injury by water in the hold; or, to trim the ship

by slightly raising heavy cargo; also, loose articles of merchandise wedged between parts of the cargo.

**Embargo.**—An order of the Government prohibiting the departure of ships or goods.

**Entrepot** (*ông-tr-po'*).—A place where goods are received and deposited, free of duty, for exportation to another port or country; a free port.

**Export.**—A commodity exported or conveyed from one country to another; used chiefly in the plural.

**Firm.**—The name, title or style under which a business establishment conducted by more than one person, such as a house or partnership or company is carried on; as, Hurst & Co.

**Free Port.**—A port where ships of all nations may load and unload free of duty, provided the goods are not carried into an adjoining country; or where goods of all kinds are received from ships of all nations at equal rates of duty.

**Freight.**—The sum which is agreed or paid for the transportation of merchandise; or for the hire or use of a ship in whole or in part. When the rate of freight is not agreed upon previous to shipping goods, the full rate current is charged. All goods are liable for freight, and their delivery can be refused if payment is not made, but they cannot be detained on the ship. In general, goods must be delivered to claim freight, but in some cases it is recoverable under a general average although thrown overboard. It cannot be claimed if the ship is totally lost.

**Garbles.**—The dust, soil, or filth, separated from good spices, drugs, &c.

**Garnishment.**—Warning or legal notice to a person in whose hands the goods of another are attached, not to pay the money or deliver the goods, but to appear in court and give information as *garnishee.*

**Goods.**—A general name for merchandise.

**Good-Will.**—The custom of any trade or business.

Lord Eldon says: "The good-will of a trade is nothing more than the probability that the old customers will resort to the old place."

**Guarantee.**—A promise to answer for the payment of some debt, or the performance of some duty, in case of the failure of

another person, who is, in the first instance, liable to such payment or performance, the person so bindiug himself being generally called by the same name, but *guarantor* is the word more correctly used in this sense.

**House.**—A firm, but sometimes applied to a commercial establishment carried on under the name of one person only.

**Import.**—Anything brought from a foreign country, or from a province, dominion, or colony of the mother country, as from Ireland, Canada, Australia, &c.; used chiefly in the plural, *Imports.* The person who *imports* the *im'ports* is called an *import'er.*

**Indemnity.**—Compensation or remuneration for loss, injury, or damage sustained. Insurance is a contract of indemnity. Also, security from penalty, or the punishment of past offences.

**Indenture.**—A mutual agreement in writing between two or more parties, whereof each party has usually a part. Indentures were originally duplicates laid together and *indented,* so that the two papers or parchments corresponded with each other. But indenting has gradually become a mere form, and it often neglected.

**Indorse.**—To write one's name upon the back of, as a paper for the purpose of transferring it, or to secure the payment of, as a note, draft, &c., or as a receipt for payment. The person who writes is called the *indorser;* the one to whom any right is transferred is the *indorsee;* and the writing upon the back the *indorsement,* or *indorsation.*

**Injunction.**—A writ or kind of prohibition granted by a court to prevent the commission of any act by which fraud or injury may be done, whereby a party is required to do or refrain from doing certain acts, according to the exigency of the writ. It is more generally used as a preventive than as a restorative process, although by no means confined to the former. It is often obtained for the purpose of preserving property in dispute pending a suit. It may be procured to prevent the negotiation of bills, the transfer of stock, piration of copyrights, trade marks, &c., and generally where persons' rights are infringed, and further injury might be done during the delay of an ordinary suit at law.

**Insurance.**—A contract whereby, for a stipulated consideration called a *premium,* certain persons called *underwriters,* or Insurance Companies, engage to make good to the *insurer,* or party insuring, any losses he may sustain of ships or their cargoes at

sea, or of houses or goods by fire. The deed containing the contract is called the *Policy of Insurance.*

**Interest.**—The premium paid for the use of money by the person using it to the person who lent it. The interest charged is at the rate of so much per cent., or in the hundred dollars, on the sum lent. Interest at 5 per cent. means $5 on every hundred dollars. The sum lent is called the *principal.* *Simple interest* is that which arises from the principal sum only. *Compound interest* is that which arises from the principal with the interest added as it becomes due, making interest on interest. The term *interest* is also applied to any right in, or advantage to be derived from, a business, manufactory, property, &c.

## INTEREST TABLE (SIX PER CENT.)

**Showing the Interest on any Sum from $10 to $10,000, at 6 per Cent.**

| | FOR 1 DAY. | FOR 15 DAYS. | FOR 1 MONTH. | FOR 1 YEAR. |
|---|---|---|---|---|
| $10 | 0 | 3 | 5 | 60 |
| 20 | 0 | 5 | 10 | $1.20 |
| 30 | 1 | 8 | 15 | 1.80 |
| 40 | 1 | 10 | 20 | 2.40 |
| 50 | 1 | 13 | 25 | 3.00 |
| 60 | 1 | 15 | 30 | 3.60 |
| 70 | 1 | 18 | 35 | 4.20 |
| 80 | 1 | 20 | 40 | 4.80 |
| 90 | 2 | 23 | 45 | 5.40 |
| 100 | 2 | 25 | 50 | 6.00 |
| 200 | 3 | 50 | $1.00 | 12.00 |
| 300 | 5 | 75 | 1.50 | 18.00 |
| 400 | 7 | $1.00 | 2.00 | 24.00 |
| 500 | 8 | 1.25 | 2.50 | 30.00 |
| 600 | 10 | 1.50 | 3.00 | 36.00 |
| 700 | 12 | 1.75 | 3.50 | 42.00 |
| 800 | 13 | 2.00 | 4.00 | 48.00 |
| 900 | 15 | 2.25 | 4.50 | 54.00 |
| 1,000 | 17 | 2.50 | 5.00 | 60.00 |
| 2,000 | 34 | 4.99 | 10.01 | 120.00 |
| 3,000 | 52 | 7.49 | 15.01 | 180.00 |
| 4,000 | 69 | 9.99 | 20.01 | 240.00 |
| 5,000 | 86 | 12.48 | 25.02 | 300.00 |
| 6,000 | $1.03 | 14.98 | 30.02 | 360.00 |
| 7,000 | 1.20 | 17.48 | 35.02 | 420.00 |
| 8,000 | 1.36 | 19.97 | 40.03 | 480.00 |
| 9,000 | 1.55 | 22.47 | 45.03 | 540.00 |
| 10,000 | 1.92 | 24.97 | 50.03 | 600.00 |

## INTEREST TABLE (7 PER CENT.)

**Showing the Interest on any Sum from $10 to $10,000, at 7 per Cent.**

| | FOR 1 DAY. | FOR 15 DAYS. | FOR 1 MONTH. | FOR 1 YEAR. |
|---|---|---|---|---|
| $10 | 0 | 3 | 6 | 70 |
| 20 | 0 | 6 | 12 | $1.40 |
| 30 | 1 | 9 | 18 | 2.10 |
| 40 | 1 | 12 | 23 | 2.80 |
| 50 | 1 | 14 | 29 | 3.50 |
| 60 | 1 | 17 | 35 | 4.20 |
| 70 | 1 | 20 | 41 | 4.90 |
| 80 | 2 | 23 | 47 | 5.60 |
| 90 | 2 | 26 | 53 | 6.30 |
| 100 | 2 | 29 | 58 | 7.00 |
| 200 | 4 | 58 | $1.17 | 14.00 |
| 300 | 6 | 86 | 1.75 | 21.00 |
| 400 | 8 | $1.15 | 2.33 | 28.00 |
| 500 | 10 | 1.44 | 2.92 | 35.00 |
| 600 | 12 | 1.73 | 3.50 | 42.00 |
| 700 | 13 | 2.01 | 4.08 | 49.00 |
| 800 | 15 | 2.30 | 4.67 | 56.00 |
| 900 | 17 | 2.59 | 5.25 | 63.00 |
| 1,000 | 19 | 2.88 | 5.83 | 70.00 |
| 2,000 | 38 | 5.75 | 11.67 | 140.00 |
| 3,000 | 58 | 8.63 | 17 50 | 210.00 |
| 4,000 | 77 | 11.51 | 23.33 | 280.00 |
| 5,000 | 96 | 14.38 | 29.17 | 350.00 |
| 6,000 | $1.15 | 17.26 | 35.00 | 420.00 |
| 7,000 | 1.34 | 20.14 | 40.83 | 490.00 |
| 8,000 | 1.53 | 23.01 | 46.67 | 560.00 |
| 9,000 | 1.73 | 25.89 | 52.50 | 630.00 |
| 10,000 | 1.92 | 28.77 | 58.33 | 700.00 |

## A TABLE OF DAILY SAVINGS AT COMPOUND INTEREST.

| CENTS, PER DAY. | PER YEAR. | IN TEN YEARS. | IN FIFTY YEARS. |
|---|---|---|---|
| 2¾ | $10.00 | $150 | $2.900 |
| 5¼ | 20.00 | 260 | 5.800 |
| 11 | 40.00 | 520 | 11.600 |
| 27½ | 100.00 | 1.300 | 29.000 |
| 55 | 200.00 | 2.600 | 58.000 |
| $1.10 | 400.00 | 5.200 | 116.000 |
| 1.37 | 500.00 | 6.500 | 145.000 |

By the above table it appears that if a mechanic, or clerk, saves only 2 1-4 cents per day, from the time he is 21 until he is three score and ten, the aggregate, with interest, will amount to $2,900;

and a daily saving of 27 1-2 cents reaches the important sum of $29,000. A sixpence saved daily will provide a fund of nearly $7,000—sufficient to purchase a good farm. There are few employees who cannot save daily by abstaining from the use of cigars and tobacco, liquors, etc. twice, or ten times the amount of the six cent piece. Every person should provide for old age, and the man in business who can lay by a dollar a day will eventually find himself possessed of over $100,000.

**Investment.**—The laying out of money in the purchase of some kind of property, usually permanent.

**Invoice.**—A written account of the particulars of merchandise shipped or sent to a purchaser, consignee, agent, &c., specifying the contents of each package of goods, their price, and the charges upon them. The term is now generally used for all accounts of goods sold wholesale. The invoice is sent by the seller to the buyer, either along with the goods, or separately by mail. Merchants often write "*errors excepted*" on the accounts which they send, that they may not be precluded from the correction of errors afterwards, if any be discovered.

**Jetsam.**—*Jettison* is the act of voluntarily throwing goods overboard, or cutting away masts, casting away sails, &c., in cases of extreme peril, in order to lighten a ship, and preserve her and the rest of the cargo. The owners of the ship or goods can claim indemnity by general average from the owners of the goods saved, and the owners of the goods, if insured, can recover from the underwriters. *Jetsam* is where goods are cast into the sea, and there sink, and remain under water; *Flotsam* is where they continue swimming; and *Ligan* is where they are sunk in the sea, but tied to a cork or buoy.

**Lay Days.**—Days allowed to a merchant or charterer to load or unload cargo.

**Lazzaretto.**—A place in which goods landed from ships in *Quarantine* are fumigated previous to their delivery.

**Lease.**—An agreement for letting of lands or tenements to another for life, for a term of years, or at will, or for any less interest than the *Lessor* or person who lets has in the property, for a rent or compensation to be paid by the *Lessee*, a person to whom the lease is granted.

### Lease of House.

*It is agreed*, this first day of January, 18—, between Frederick Seemon of Philadelphia, County of Philadelphia, and State of Pennsylvania, of the one part and Wm. Long, of Philadelphia, aforesaid, of the other part, as follows:

The said Frederick Seemon, doth agree to let unto the said Wm. Long, all that certain lot of ground, with the house thereon, being and situate (*here describe the premises*), for one year from this first day of January, 18—, and for such longer time after the expiration of the said year as both the said parties shall agree, and until the end of three months after notice shall be given by either of the said parties, to the other of them, for leasing the said premises at and for the yearly rent of seven hundred dollars, payable quarterly on the first days of April, July, October, and January, in equal proportions; which said yearly rent, payable quarterly as aforesaid, the said Wm. Long, for himself, his executors, and administrators, doth hereby covenant and agree to pay to the said Frederick Seemon, his executors, administrators and assigns, accordingly, for so long a time as he shall hold and enjoy the said premises as aforesaid, and until the end of the said three months next after notice shall have been given by either of the above parties to the other, for leasing the said premises as aforesaid.

Witness our hands and seals, day and year first written.

*Signed, sealed and delivered in presence of*
CHAS. A. BROWN.
LEWIS GOLDSBOROUGH.

FREDERICK SEEMOM. L. S.
WM. LONG. L. S.

**Letter of Credit.**—A letter from bankers or mercantile houses addressed to their agents or correspondents elsewhere, requesting them upon the credit of the writer, to pay or advance money to a certain third party—the bearer of the letter.

### Form of Letter of Credit.

NEW YORK, July 10, 18—

Messrs. GEO. COOK & Co., Gentlemen:

Please deliver to John Myers, of this place, merchandise to any amount not exceeding ten thousand dollars, and I will hold myself accountable to you for the payment of the same, in case Mr. Myers should fail to make payment thereof.

You will please notify me of the amount for which you may give him credit, and if default should be made in the payment, let me know immediately.

I am, gentlemen, your most obedient servant,

URIAH HEEP.

Messrs. GEO. COOK & Co., No. — Market Street, Philadelphia.

**Letter of License.**—An agreement signed by the creditors of an insolvent or embarrassed trader, permitting him to carry on business for a certain time without satisfying their claims.

**Liabilities.**—The whole amount of debts owing by, and pecuniary responsibility of, a person or company, as opposed to *Assets*.

**Lien.**—A right or claim upon a real or personal property, voluntarily granted by its owners for the security of some debt or duty; also, a right in one to hold and retain the property of another until some claim of the former is paid or satisfied.

**Lighterage**—The price paid for unloading ships by lighters or boats used to convey the goods on shore.

**Liquidation.**—Settling and adjusting debts.

**Lloyd's Register.**—Is a register of vessels, giving the tonnage, age, build, character and condition of each ship whose owners conform to their rules. It is published yearly, with occasional supplements when alterations or additions are necessary.

**Log-Book.**—A book in which is entered the daily progress of a ship at sea, as indicated by the log, or apparatus for measuring the rate of a ship's motion through the water, with notes on the weather.

**Manifest.**—A document containing a specific description of a ship, with the list of the names of the passengers, and a description of the whole of the cargo, number, and marks of the packages, &c., with the ports of destination, made out and signed by the master before leaving port. to be exhibited at the Custom House.

**Marking Goods.**—It is customary in most business houses to use a private mark, which is placed upon goods in order that the proprietor or salesman may be able at any time to ascertain exactly the cost and selling prices of an article. A word or short sentence containing ten different letters is selected, and as each letter represents one of the ten digits, any amount, no matter how large or small, can be written with the same facility as in figures. Take for example the word,

C H A R L E S T O N.
1 2 3 4 5 6 7 8 9 10

Twenty-five cents would be written hl, $2.25 h hl, $6413.87 erca tl, &c. An extra letter called a repeater is often used and may be any letter not contained in the original word. X is the most used, thus: 663 would be written exa.

Sometimes a sentence containing ten words is used and the initial letters of the words taken as the representative ones, thus:

"In walking down Broadway James sees many very curious things," the representative letters in this sentence are,

I W D B J S M V C T.
1 2 3 4 5 6 7 8 9 10

**Measurement Goods.**—Goods on which freight is charged by measurement.

**Merchantable.**—Fit for market. Goods not in a sound state are said to be in *unmerchantable condition*, but are often *made merchantable* by separating the damaged from the sound parts.

**Mercantile and Commercial.**—*Commercial* is the wider term, being sometimes used to embrace *mercantile*. In their stricter use *commercial* relates to the shipping, freighting, forwarding, and other business connected with the *commerce* of a country (whether external or internal), that is, the exchange of commodities; while *mercantile* applies to the sale of merchandise and goods when brought to market. As the two employments are to some extent intermingled, the two words are often interchanged.

**Monopoly.**—The sole power of dealing in any species of goods, or of dealing with a country or market, obtained either by engrossing the articles in the market by purchase, or by a license from Government.

**Mortgage.**—A conveyance of property, upon condition, as security for the payment of a debt or the performance of a duty, and to become void upon payment or performance. It was called a *mortgage* or *dead pledge*, because, whatever profit it might yield, it did not thereby redeem itself, but became lost or *dead* to the mortgager upon breach of the condition. But in equity a *right of redemption* is an inseparable incident of a mortgage, until the mortgager is debarred by his own laches (neglect), or by judicial decree. The person who conveys the property is called the *mortgager*, and the one to whom it is conveyed the *mortgagee*.

**Negotiable.**—Any document which by indorsement or assignment may be transferred to another person, conveying to him a legal right to the money or property specified, as a Dock Warrant, Bill of Exchange, &c., is said to be *negotiable*.

**Notary.**—A public officer who attests or certifies deeds and other writings, usually under his official seal, and to make them authentic in another country. His duties chiefly relate to documents used in commercial transactions, such as protests of negotiable paper, ships' papers in case of loss or damage. He is generally called a *Notary Public*, and his acts are recognized and respected in all commercial countries.

**Partnership.**—A contract between two or more persons for joining together their money, goods, labor and skill, or any or all of them, under an understanding that there shall be a communion

of profits, according to the shares agreed upon between them, and for the purpose of carrying on a legal trade, business, or adventure. The term is generally applied to associations in which the partners personally direct the business, those of a more extensive character, managed by elected directors, being called Companies.

A *sleeping, silent,* or *dormant partner*, is one who furnishes capital only, taking no active share in the business of a company or partnership, but is entitled to a share of the profits, and liable to a share in the losses.

### Articles of Co-partnership.

*Articles of agreement*, made and concluded this first day of January, in the year of our Lord, one thousand eight hundred and seventy three, between Richard Howe, of Augusta, County of Kennebec, and State of Maine, of the one part and Thomas Thompson, of the same place, of the other part. The said partners have agreed, and by these presents do agree, to associate themselves as co-partners in the art and trade of buying and selling books and stationery; which said co-partnership shall continue from the date of these presents, for, and during, and to the full end and term of thirteen years next ensuing. The name, style, and title of such partnership shall be Howe and Thompson. For the purpose aforesaid, he, the said Richard Howe, hath upon the day and date hereof, put into partnership, as capital stock, the sum of four thousand dollars; and the said Thomas Thompson has also invested the like sum of four thousand dollars; both of which sums are to be used, laid out and employed in common between the parties hereunto, for the management of the said business to their mutual advantage. And it is hereby agreed between the parties, each himself respectively, and for his own special and particular part in manner and form as follows: That they shall not and will not, at any time hereafter, during the period above named, exercise or follow the said trade, or any other, to their private emolument, or advantage; but shall and will, from time to time, and at all times during said period (if they shall so long live), use their utmost endeavors, to the best of their skill and ability, for their mutual advantage, with the stock as aforesaid and its increase. And also, that they shall and will, during the period aforesaid discharge equally between them the rent of such premises as they may rent or hire, for the management and conduct of the trade or business aforesaid. And that all profit, gain, or increase, that shall or may arise from, or by reason of said joined business, shall be equally and proportionally divided between them, share and share alike; and also all losses that may happen in the said business, by bad debts, bad commodities, or howsoever otherwise, shall be paid by and borne equally between them.

And it is further agreed, that there shall be kept, during the said period and joint business, perfect, just, and correct book accounts, wherein each of the said co-partners shall enter and set down, as well all the money by him received and expended, in and about the business aforesaid, as also all merchandise by him bought and sold, by reason and on account of the said co-partnership, and all other matters and things in anywise belonging or appertaining thereto, so that either of them may at any time have free access thereto.

And also, that the said co-partners, once in twelve months, or oftener, if need shall require, upon the request of either of them, shall make and render, each to the other, or to the executors and administrators of each other, a true and full account of all profits and increase by them and each of them made, and all losses by them, or each of them, sustained, and also, of all payments, receipts and disbursements, and all other things whatsoever by them, or either of them, made, received, and disbursed, acted, done and suffered in the said co-partnership; and the account so made, shall and will clear, adjust, pay and deliver each unto the other, at the time of making such account, their equal share of the profit so made as aforesaid.

And that, at the end of the aforesaid period of thirteen years, or other sooner determination of these presents (whether by the death of one of the parties hereto, or otherwise), they, the said co-partners, each to the other, or, in case of the death of either, the surviving party to the executors or administrators of the party deceased, shall and will make a true, full and final account of all things as aforesaid, and in all things well and truly adjust the same; and also, that, upon making such accounts, all and every the stock, as well as the gain and increase thereof, which shall appear, or is found, to be remaining, shall be equally apportioned and divided between them, the said co-partners, their executors or administrators, share and share alike.

In witness whereof the said parties to these presents have hereunto set their hands and seals, the day and year first above written.

*Signed, sealed and delivered in presence of*
HENRY FRANKLIN. RICHARD HOWE. L. S.
JOSEPH FAULKNER. THOMAS THOMPSON. L. S.

## Notice of Dissolution.

*Notice is hereby given*, that the partnership, lately subsisting between Thos. Wallace and George Gray, of Cincinnati, County of Hamilton, and State of Ohio, under the firm name of Wallace and Gray, was dissolved by mutual consent (death of John Kelly, or limitation) on the thirty first day of May last.

All debts owing to the said partnership are to be received by the said Thos. Wallace, and all demands on the said partnership are to be presented to him for payment; (*or, either partner is allowed to use the name of the firm in liquidation of all debts due to and from the partnership*).

THOS. WALLACE.
CINCINNATI, June 1, 18— GEORGE GRAY.

## Dissolution of Partnership.

*We, the undersigned*, do mutually agree, that the partnership formed between us by the within articles, be and the same is hereby dissolved, except for the purpose of the final liquidation and settlement of the business thereof; and upon such settlement wholly to cease and determine.

In witness whereof, we have hereunto set our hands and seals, this first day of January, 18—.

*Signed, sealed and delivered in presence of*
GEO. WILLS. WM. MOODY. L. S.
LAWRENCE CATE. JOHN COSTER. L. S.

The above to be indorsed upon the back of the original agreement.

**Partnership Settlements.**—Partnership is the association of two or more persons for transaction of business. Such an association is called a firm, house or company, and its members are called partners.

The means contributed by the members of the firm is called its capital.

Money, property, notes and debts due from others are called its *Assets* or resources. Debts which the firm owe are termed *Liabilities*. Amounts withdrawn affect the original investment. When it is desired to retain the net capital at starting unchanged, the amounts withdrawn may be treated as resources; but they must be taken from each partner's capital to obtain his true share.

Obligations assumed by the firm for a partner are to be treated in the same manner as sums withdrawn by him; and additional sums

invested or to which he is entitled, increase his original investment. If the resources are greater than the liabilities, the difference is termed the *net capital;* if the liabilities are greater than the resources the difference is termed *net insolvency.* The difference between the total gains and the total losses is called the *net gains* or *net losses.* The gains and losses of a firm are divided among the partners in accordance with the original agreement or contract between them. The division is seldom made in exact proportion to the amount invested; it is more customary to credit each partner with interest on his capital, less interest on sums withdrawn during the year.

Sometimes the skill of one partner is considered equivalent to another's capital; in some cases certain privileges are granted to him who invests most; and sometimes a stated salary is allowed to each partner according to his ability, and is taken from the gains of the firm before they are divided.

A partnership is not constituted merely by an interest, but depends upon the joint liability to loss, as well as on the participation in the profits. A stipulated portion of the profits as a mere compensation for his labor or services does not constitute a partnership.

A General Partnership is one formed for trade generally without limitations, and comprehends whatever business the partners may engage in.

A Special Partnership is one which is confined by the terms of the agreement to some particular kind of trade or business, or some praticular transaction or speculation.

A Limited Partnership is one in which the responsibility of one or more partners is limited to the amount invested by him or them in the concern. In a limited partnership the special partner has the advantage of investing where the profits are equal to the gains of actual business, without risking more than the sum contributed.

**Pass-Book.**—A book passing between bankers and their customers, in which are entered all payments and receipts of cash. It is written up by the clerks as often as required, and balanced once a month. Also, a book in which a trader enters articles bought on credit, and then passes or sends it to the purchaser.

**Per Cent.**—A contraction of *per centum*, Latin words meaning per hundred, and applied to rates of interest, discount, &c. *Per*

*Centage* is the allowance, duty, interest, or commission on one hundred.

**Permit.**—A written license from the Excise Office to permit the removal of excisable goods upon which duty has been paid, from one place to another.

**Policy.**—A writing or instrument in which a contract of Life Assurance, or other insurance is embodied, containing the terms and conditions. It is almost invariably a printed form, in which the names, &c., are filled up in writing, and the various companies and insurers use nearly the same forms.

An *Interest Policy* shows by its form that the assured has a real interest in the matter insured.

A *Wager Policy* shows on the face of it that the contract it embodies is a pretended insurance, founded on an ideal risk, where the insured has no interest in anything insured. A policy is *valued* when the agreed value of the subject is expressed on the face of it; *open* when the value of the subject is not fixed or agreed in it. When the sum insured under an *open* policy is not sufficient to cover the value of the goods, an additional insurance may be obtained, and a *supplementary* policy is granted; and when the sum insured is more than the declared value of the goods, the difference is termed *Short Interest*, and a portion of the premium is returned upon proper notice, if the fact was duly declared on the policy.

**Posting.**—Copying or transferring into the ledger the entries made in the day book or other books.

**Post Obit Bond.**—A bond in which the *obligor*, in consideration of having received a certain sum of money, binds himself to pay a larger sum, on unusual interest, on the death of some specified individual from whom he has expectations.

**Premium.**—The per centage or sum of money paid to a company or underwriters for Life Assurance, or any other kind of insurance. The term is also used to signify a sum in advance of the capital or sum lent. It also signifies an extra sum beyond a fixed price. Thus, shares are said to be at a premium when their market price is beyond the sum paid upon them; thus, if shares upon which $45 has been paid are selling at $50, they are said to be at a premium of $5.

**Price Current, or Price List.**—A statement or list, published

statedly or occasionally, of the prevailing prices of merchandise, stocks, species, bills of exchange, rate of exchange, &c.

**Principal.**—A capital sum of money, placed out at interest, due as a debt or used as a fund—so called in distinction from *interest* or *profit*. Also the responsible person in a transaction, or the head of, or partners in, an establishment.

**Procuration.**—A written document, either a letter or power of attorney, by which a person is empowered to transact the affairs of another. When the representative signs any paper it is customary for him to say "*per procuration*," and add his own name.

**Pro Forma.**—Latin words signifying "*for the sake of form.*" *Pro forma* invoices or account sales are papers made up previous to entering upon an adventure for the purpose of forming an opinion as to its probable success.

**Promissory Note.**—See BILL.

**Prompt.**—A limit of time given for the payment of an account for produce purchased, this limit varying with different goods.

**Pro Rata.**—Latin word signifying "*in proportion*," to divide or distribute proportionally.

**Quarantine** (*kwor'-an-teen*).—Specifically, the term originally of forty days, but now of undetermined length, during which a ship, arriving in port, and suspected of being infected with a malignant contagious disease, is obliged to forbear all intercourse with the shore; hence, restraint or inhibition of intercourse to which a shi is subjected on the presumption that she may be infected.

**Quotation.**—The current prices of stocks or commodities. When, as in certain articles, the prices named include all charges for shipping them, they are termed quotations F. O. B. (free on board).

**Rebate.**—Deduction of interest, or any sum, &c., on account of prompt payment. The term is used for any return of discount, by bankers and bill discounters, upon bills being taken back, before they become due, by those for whom they were discounted.

**Receipts.**—An acknowledgment in writing of a certain sum of money having been received from a person named.

An account may be acknowledged as settled by the person who receives the money writing at the bottom of it "*Paid*," or "*Re-*

*ceived Payment,"* and then signing his name. When one person receives money for another, he signs his name thus, "Paid, John Thompson for Charles Howard." Also, a writing acknowedging the taking of money or goods.

### Receipt on Accounts.

NEW YORK, April 27, 18—. Received from James Moore, seventy-five dollars on account. KEYSER & TROXELL.

### Receipt in Full.

NEW YORK, May 11, 18—. Received from Messrs. Smith & Curlett, one hundred and four dollars and seventy-three cents, in full of account to date.
$103 73-100. WILLIAM JOHNSON.

A receipt like the first acknowledges the partial payment of a debt, and one like the second of all claims, excepting negotiable notes.

### Receipts for Cash Payment in Full of all Demands.

Received, New York, Feb. 1, 18—, of Charles A. Brown, four hundred and fifty dollars and twenty-five cents. in full of all demands.
$450 25-100. SMITH, ROBERTS & CO.

### In Full of Account Rendered.

Received, Cairo, Oct. 10, 18—, of John Paywell, six hundred dollars in full for account rendered to first instant.
$600.00 RECEIVER & CO.

### In full for Goods Sold and Delivered Without a Bill.

Received, Richmond, Sept. 1. 18—, from Henry Thomas, one hundred and fifty dollars, in full for three cows, now sold and delivered to him.
SIMON SHARP.

### Receipt to Guardian for Payment on account of his Ward.

Received, St. Albans, June 10, 18—, from Edward Morse, Esq., guardian of Kitty Clyde, one of the minor children of John Clyde, deceased, two hundred dollars, in full for board and tuition of said Kitty Clyde, from June 10, 18— to date. JONATHAN WISEHEAD.

### Receipt for Lading a Wagon.

Received, Belleville, Aug. 10, 18—, from Alonzo Cooper, in my wagon, the following goods, marked, numbered, and weighing as follows:

| | | | | | |
|---|---|---|---|---|---|
| J. T. B. | No. 1 | One hogshead weighing | 700 | pounds |
| " | " 2 | One " " | 680 | " |
| " | " 3 | One box " | 420 | " |
| " | " 4 | One bale " | 350 | " |
| | | | 2,150 | " |

All in good order and condition, with which articles I promise to proceed without delay or unnecessary detention to Parkersburgh, West Va., and to deliver them in the same good order and condition unto Philip Silver, in the said Parkersburgh, or his order, on his paying the sum of seventy-five cents per hundred pounds for said load. FREDERICK DRIVER.

**Receipt for Stock put out to Winter.**

Received, Belleville, October 10, 18—, from John Jacobi, ten cows and six swine, which I promise to keep through the winter and feed with good hay, etc., and return in good condition on the first day of May next; casualities excepted, he paying me ten dollars each for the cows, and two dollars each for the swine. Witness my hand. GEO. SMITH.

**Re-Exchange.**—The expense chargeable on a bill of exchange or draft which has been dishonored in a foreign country, and returned to that country in which it was made or indorsed, and then taken up. The rate of *re-exchange* is regulated with respect to the drawer, at the course of exchange between the place where the bill of exchange was payable, and the place where it was drawn.

**Register.**—A document issued by the Custom House, containing a description of a vessel, its name, tonnage, country, ownership, &c., always to be kept on board on a foreign voyage as evidence of its nationality. Coasting vessels are enrolled, not registered.

**Re-Insurance.**—A contract whereby an insurer of property, who has incurred too great a liability, or become dissatisfied with the nature of the risk he has contracted to take upon himself, obtains indemnity against loss, by his insurance from some other insurer.

**Release for Freight.**—A document signed by the owners of vessels or their agents on receiving the payment of freight, giving a formal release to dock companies and wharfingers to whom they had previously given notice not to deliver goods.

**Remittance.**—A sum of money, bill of exchange, or the like, transmitted from one person to another.

**Rente.**—A French term, equivalent to government annuity. The holder is called a Rentier (*rong'-te-a'*).

**Returns.**—Bills of exchange, or goods bought and transmitted as a medium of returning the proceeds of consignments; also, the amount of goods sold.

**Reversion.**—A payment which is not to be received, or a benefit which does not begin, until the happening of some event, as the death of a person.

**Salvage.**—The compensation allowed to persons who voluntarily assist in saving a ship or her cargo from peril, or goods and property from fire. The *salvors* have a *lien* upon the property saved, and can detain it until the claims are legally settled. The term is also applied to property saved.

**Sample.**—A small portion taken from the bulk or quantity of

any kind of merchandise as a specimen of the whole. A collection of samples or average sample is called a *Muster*.

**Scrip.**—A certificate of stock subscribed to a bank or other company, or of a share of other joint property, preliminary to the registration of the subscribers; also one of the forms of certificate given in exchange for a public loan, previous to the issue of the *bonds*, as *consol scrip*, *reduced scrip*, which may be sold separately as such until all the installments of the loan are paid.

A *Scrip Company* is one having shares which pass by delivery without register or transfer.

**Securities.**—Documents showing evidence of, and securing a right to a debt or property of any kind, as bills of exchange, bills of lading, bonds, certificates of stock, deeds, dock warrants, leases, policies.

**Set-Off.**—A counter-claim or cross-debt filed or set up by the defendant against the plaintiff's demand. *Set-off* differs from *Reduction* and *Recoupment*, as the latter generally grows out of the same matter or contract with the plaintiff's claim, while the former grows out of a distinct matter, and does not of itself deny the justice of the plaintiff's demand. *Off-set* is sometimes improperly used for the legal term *Set-off*.

**Share.**—The part allotted or belonging to one, of any property or interest owned by a number.

**Ship's Papers.**—Papers with which a vessel is required by law to be provided, and the production of which may be required on certain occasions; such are the register, passport, or sea-letter, charter party, bills of lading, invoice, log-book muster roll, bill of health, shipping articles, and the like.

**Shipping Articles.**—Articles of agreement between the master or captain of a vessel and the seamen on board, in respect to the amount of wages, length of time for which they are shipped, &c.

**Short Exchange.**—Bills of exchange made payable at sight, or at *Short Sight*, that is, in a little time, three days or so, after being presented to the payer.

*The Shorts* on the Stock Exchange are those who are unsupplied with stocks which they have contracted to deliver. To *Sell Short* is to sell for future delivery what the party selling does not own, but hopes to buy at a lower rate.

**Sinking Fund.**—A fund created for sinking or paying a public debt, or purchasing the stock for the government; also applied to a fund set apart for a special purpose, as the paying of a debt.

**Solvent.**—Able to meet all just debts and liabilities.

**Specie.**—Any kind of coined money.

**Specification.**—A written statement containing a minute description or enumeration of particulars.

**Standard.**—That which is established by authority as a rule or measure of quantity, as a pound, gallon, or weight; hence the original weight or measure sanctioned by government; also the proportion of weight of fine metal and alloy established by authority for coinage.

**Staple.**—The chief article of a country's production or manufacture.

**Sterling.**—A term applied to the lawful money of Great Britain.

**Stock.**—This term has several applications in commerce; as, capital which an individual employs in business; in book-keeping, the account which is credited with all values contributed or added to the capital of the concern, and debited with whatever is at any time subducted therefrom; money funded in government securities of different countries, called also the Public Funds. Shares in joint-stock companies are also called stock. The goods kept for sale by a storekeeper are termed his *Stock in Trade*. *Dead Stock* comprises the implements of husbandry, and produce stored up for use;—in distinction from *Live Stock*, or the domestic animals on a farm.

**Stock Exchange.**—A building where stocks and shares are bought and sold by an association or body of stock brokers and stock jobbers, who meet and transact business by certain recognized forms, regulations, and usages. The *stock brokers* deal in the purchase and sale of stocks and shares upon commission; the *stock jobbers* speculate in the purchase and sale, through the brokers, for gain. The public are excluded, and can only purchase or sell through a stock broker, who charges his commission, and also have indirectly to contribute to the profit of the stock jobbers through the fluctuations which they cause in the market price. The Stock Exchange is managed by a committee.

**Stoppage in Transitu.**—The exercise of the right of a seller of goods to stop them "*on the passage*" to the purchaser or his agent, if the purchaser has become bankrupt since they were bought.

**Subpœna** (colloqually pronounced *sup-pe'-na*).—A writ commanding the attendance in court of the person on whom it is served, as a witness, &c., "*under penalty.*"

**Supercargo.**—An officer or person engaged to proceed in a merchant ship to manage the sales and commercial concerns of the voyage.

**Suspension of Payment.**—The act of a trader or firm declining to pay any one debt upon finding that they are unable to meet all their liabilities · also, when a bank stops cashing its checks and notes.

**Tale Quale.**—Latin words meaning "*such as,*" a term used in contracts where grain is sold off the coast, by a sample drawn at the port at which the ship has touched; and signifying that the cargo is held to be the same in quality as the sample, and that the buyer takes the risk of any damage the cargo may afterwards sustain.

**Tare.**—Deficiency in weight or quantity of goods, by reason of the weight of the cask, bag or other thing containing the commodity, and which is weighed with it; hence the allowance or abatement of a certain weight or quantity.

*Actual tare* is the deduction made where each cask, &c., is weighed separately from its contents; *Average tare* is where there are many of similar size and description, and some are weighed to take an average for all; and *Estimated tare* is where the coverings of certain goods are always so nearly of the same weight that a fixed per centage is allowed for them.

**Tariff.**—A list or tables of goods with the duties or customs to be paid for the same, either on importations or exportations.

**Tender.**—An offer in writing to supply certain articles, goods, ships, or anything that may be required, at prices and conditions specified in the *tender;* also, an offer, either of money to pay a debt, or of services to be performed, in order to save a penalty or forfeiture, which would be incurred by non-payment or non-performance; as the *tender* of rent due or of the amount of a note

or bond, with interest. To constitute a legal tender, such money must be offered as the law prescribes. So also the tender must be at the time and place where the rent or debt ought to be paid, and it must be the amount due.

**Time Bargain.**—A contract for the sale or purchase of stock, &c., at a certain future time.

**Tonnage.**—The amount of weight in tons or cubical contents that a ship will carry.

**Traveller.**—A commercial agent who travels for the purpose of receiving orders from merchants, collecting money, and representing their interests.

**Tret.**—An allowance to purchasers, for waste or refuse matter, of 4 pounds on every 104 pounds of *suttle* weight, or weight after the *tare* is deducted.

**Ullage.**—What a cask wants of being full.

**Underwriter.**—The name given to the individual marine insurers at *Lloyd's* and elsewhere; so called because they *underwrite* or sign their names to the policy of insurance, for the purpose of becoming answerable for loss or damage, upon certain conditions, for a certain premium per cent.

**Usance.**—The time which by usage or custom, is allowed in certain countries for the payment of a bill of exchange. In New York foreign bills are usually drawn at thirty days sight, but the banker often accommodates himself to the usance of the place upon which he draws. The following are the usances at the respective places:

| | | | |
|---|---|---|---|
| Amsterdam | 1 mo. date | Hamburg | 1 mo. date |
| Antwerp | 1 " " | Leghorn | 3 " " |
| Altona | 1 " " | Leipsic | 14 days' sight |
| Barcelona | 60 days' date | Lisbon | 60 " date |
| Berlin | 14 " sight | Madrid | 60 " " |
| Bilboa | 2 mo. date | Malta | 30 " " |
| Bordeau | 30 days' " | Milan | 3 mo. " |
| Cadiz | 2 mo. " | Naples | 3 " " |
| Dantzic | 14 days' sight | Oporto | 60 days' " |
| Frankfort-on-the Main | 14 " " | Paris | 1 mo. " |
| Geneva | 30 " date | Rotterdam | 1 " " |
| Genoa | 3 mo. " | Trieste | 14 days' sight |
| Gibraltar | 2 " sight | Venice | 3 mo. date |
| | | Vienna | 14 days' sight |

**Usury.**—A premium or compensation paid, or stipulation to be paid, for the use of money borrowed, or returned, beyond the rate of interest established by law.

☞ The legal rates of interest in the United States are:

| | | | |
|---|---|---|---|
| Maine | Six per cent. | Louisiana | Five per cent. |
| New Hampshire | " " | Tennessee | Six " |
| Vermont | " " | Kentucky | " " |
| Massachusetts | " " | Ohio | " " |
| Rhode Island | " " | Indiana | " " |
| Connecticut | " " | Illinois | Ten " |
| New York | " " | Contract on Loans | |
| New Jersey | " " | Missouri | Six " |
| Pennsylvania | " " | Michigan | Seven " |
| Delaware | " " | Arkansas | Six " |
| Maryland | " " | Florida | " " |
| Virginia | " " | Wisconsin | Seven " |
| North Carolina | " " | California | Ten " |
| South Carolina | Seven " | Oregon | Six " |
| Georgia | Eight " | Minnesota | Seven " |
| Alabama | " " | Iowa | Six " |
| Mississippi | " " | Utah | Seven " |

**Vend'or or Vend'er.**—One who transfers the exclusive right of possessing a thing, either his own or that of another as his agent, for a price or pecuniary equivalent. The word is spelled *Vender* when applied to ordinary dealers, but takes the legal form *Vendor'*, with reference to a *Vendee'* or person to whom the thing is sold. *Vend* is applicable only to wares, merchandise, or other small articles, not to lands and tenements.

**Voucher.**—A book, paper, or document which serves to vouch the truth of accounts, or to confirm and establish facts of any kind.

**Warranty.**—In modern law and law of contracts, an engagement or undertaking, express or implied, that a certain fact regarding the subject of a contract is, or shall be, as it is expressly or impliedly declared or promised to be. In sales of goods by persons in possession, there is an *implied warranty of title*, but, as to the *quality* of goods, the rule of every sale is, "*Caveat emptor*," "Let the buyer beware."

In insurance law it is a stipulation or engagement by a party insured, that certain things relating to the subject of insurance, or affecting the risk, exist, or shall exist, or have been, or shall be done; such as the stipulation in a policy of life assurance that the declaration as to health, &c., signed by the assured, shall become part of the policy; and in marine insurance, the periods of the ship's sailing, or the liability of the insurers for average claims. These *warranties* when express, should appear in the policy; but there are certain implied warranties.

**Wharfage.**—The fee or duty paid for using a wharf, dock, or quay, for loading or unloading goods.

**Warehousing.**—A system of storing imported goods in public warehouses on their being landed from the vessels, pending their disposal for home consumption or re-exportation.

**Warrant of Attorney.**—A power given by a client to his attorney to appear and plead for him, or to suffer judgment to pass against him, by confessing the cause of the action to be just.

**Ways and Means.**—An expression implying the resources of an individual or concern applicable for certain purposes, and the mode of applying them.

## BUSINESS LAW.

1. Ignorance of the law excuses no one.
2. It is a fraud to conceal a fraud.
3. The law compels no one to do impossibilities.
4. An agreement without consideration is null and void.
5. Signatures made with a lead pencil are good in law.
6. A receipt for money paid is not legally conclusive.
7. The acts of one partner bind all the others.
8. Contracts made on Sunday cannot be enforced.
9. A contract made with a minor is void.
10. A contract made with a lunatic is void.
11. Contracts for advertisements in Sunday newspapers are invalid.
12. Principals are responsible for the acts of their agents.
13. Agents are responsible to their principals for errors.
14. Each individual in a partnership is responsible for the whole amount of the debts of the firm.
15. A note given by a minor is void.
16. Notes bear interest only when so stated.
17. It is not legally necessary to say on a note "for value received."
18. A note drawn on Sunday is void.
19. A note obtained by fraud, or from a person in a state of intoxication cannot be collected.
20. If a note be lost or stolen, it does not release the maker; he must pay it.
21. An indorser of a note is exempt from liability if not served with notice of its dishonor within 24 hours of its non-payment.

## DAY BOOK.

| Folio in Ledger. | January 1, 1874. | | |
|---|---|---|---|
| 1 | Bought of R. M. DeWitt<br>Goods, as per their invoice..... | 75 | 10 |
| 2 | Bought of Hurst & Co.<br>Goods as per their invoice..... | 120 | 05 |
| 3 | Bought of Fisher & Dennison<br>Goods as per their invoice..... | 150 | 00 |
| 4 | Bought of Harper Bros.<br>Goods as per their invoice..... | 62 | 30 |
| | 2nd. | | |
| 5 | Bought of Ackerman & Co.<br>Goods as per their Invoice. | 94 | 30 |
| | 3rd. | | |
| 6 | Sold Turpin & Co.<br>Half Cash,<br>Half Three Months Bill | | |
| | 60 Hurst & Co.'s Hand Books..... | 12 | 00 |
| | 40 Novels..... | 13 | 00 |
| | 20 Books, (assorted)..... | 12 | 00 |
| | Forwarded by Union Express | 37 | 00 |
| 7 | Sold W. Strange,<br>42 Assorted Books..... | 25 | 40 |
| | 4th. | | |
| 8 | Sold Boyd & Co.<br>36 Elements of Commerce.....<br>Forwarded per U. S. Express. | 37 | 16 |
| 5 | Paid Ackerman & Co.<br>Strange's Acceptance, due April 7...<br>Boyd & Co. do. due March 7.. | 15<br>37 | 40<br>16 |
| | | 53 | 56 |
| 9 | Bought of B. Myers,<br>100 Reams of Paper..... | 85 | 00 |
| 9 | Sold B. Myers<br>120 Odd Volumes all for..... | 41 | 15 |

*Dr.* CASH.

| 1874. | | | | |
|---|---|---|---|---|
| Jan. 1. | * | To Capital | 1000 | 00 |
| | * | Cash received for goods (ready money) | 7 | 40 |
| 3. | 6 | Turpin & Co. received for account of their house in Baltimore | 18 | 00 |
| | 7 | W. Strange | 10 | 10 |
| 4. | * | Cash received for goods (ready money) | 3 | 30 |
| | | | 1038 | 80 |
| Feb. 1. | | To Balance | 827 | 20 |
| | | | 827 | 20 |
| March 1. | | To Balance | 807 | 20 |
| | | | 807 | 20 |
| April 1. | | To Balance | 742 | 20 |
| 6. | | Bill Receivable, No. 101, received in | | |
| | * | cash, this day | 19 | 12 |
| | | | 761 | 02 |
| May 1. | | To Balance | 657 | 90 |

NOTE.—The Amounts marked in the folio margin with a star, are not by *single* entry, posted in the Ledger; the Cash Book alone, under *that* system, being quite sufficient for their registery. Only accounts with *persons* are kept; not with *things* as in Double Entry. At the same time they may, if wished, be posted under their respective heads as matters of reference, but care must be taken not to include them in the BALANCE, of which they form no part.

BOOK. *Dr.*

| 1874. | | | | |
|---|---|---|---|---|
| Jan. 2. | 1 | By amount paid R. M. DeWitt..... | 40 | 00 |
| | 2 | ————————Hurst & Co..... | 60 | 00 |
| | 3 | ————————Fisher & Dennison... | 75 | 00 |
| | 4 | ————————Harper Bros..... | 31 | 00 |
| 6. | * | By Trade Charges, Expenses and Wages to this day..... | 5 | 60 |
| | | | 211 | 60 |
| | | Balance to next month..... | 827 | 20 |
| | | | 1038 | 80 |
| Feb. 5. | * | By Bill Payable, No. 104, due this day. | 20 | 00 |
| | | Balance..... | 807 | 20 |
| | | | 827 | 20 |
| Mar. 5. | | By Bill Payable, No. 101, due this day. | 20 | 00 |
| | * | Do. do. 102, do. | 45 | 00 |
| | * | | | |
| | | | 65 | 00 |
| | | Balance..... | 742 | 20 |
| | | | 807 | 20 |
| April 5. | | By Bill Payable, No. 103, due this day. | 30 | 00 |
| 7. | | Ackerman & Co. for Strange's Acceptance, due this day returned unpaid..... | 15 | 40 |
| | * | | | |
| | 7 | | | |
| 8. | | One month's rent due this day..... | 40 | 00 |
| | | ————————Income Taxes..... | 10 | 12 |
| | * | ————————City Taxes..... | 7 | 60 |
| | | | 103 | 12 |
| | | Balance..... | 657 | 90 |
| | | | 761 | 02 |

THE

Folio 1. *Dr* R. M.

| 1873. | | | | | |
|---|---|---|---|---|---|
| Jan. | 2 | 1 | To Cash | 40 | 00 |
| | 2 | 1 | To Balance carried down | 20 | 00 |
| Dec. | 31 | | To Bills Payable, No. 101 | 15 | 10 |
| | | | | 75 | 10 |

Folio 2. *Dr* HURST

| 1874. | | | | | |
|---|---|---|---|---|---|
| Jan. | 2 | 1 | To Cash | 60 | 00 |
| | 2 | 1 | To Bills Payble, No. 102 | 45 | 00 |
| Dec. | 31 | | To balance carried down | 15 | 50 |
| | | | | 120 | 50 |

Folio 3. *Dr.* FISHER

| 1874. | | | | | |
|---|---|---|---|---|---|
| Jan. | 2 | 1 | To Cash | 75 | 00 |
| | 2 | 1 | To Bills Payable, No. 103 | 30 | 00 |
| Dec. | 31 | | To balance carried down | 55 | 00 |
| | | | | 150 | 00 |

Folio 4. *Dr.* HARPER

| 1874. | | | | | |
|---|---|---|---|---|---|
| Jan. | 2 | 1 | To Cash | 31 | 00 |
| | 2 | 1 | To Bill Payable, No. 104 | 20 | 00 |
| Dec. | 31 | | To balance carried down | 11 | 30 |
| | | | | 62 | 30 |

LEDGER.

DEWITT. Cr.

| 1874. | | | | | |
|---|---|---|---|---|---|
| Jan. | 1 | 1 | By Goods..... | 75 | 10 |
| | | | | 75 | 10 |
| Dec. | 31 | | By Balance brought down..... | 15 | 10 |

AND Co. Cr.

| 1874. | | | | | |
|---|---|---|---|---|---|
| Jan. | 1 | 1 | By Goods..... | 120 | 50 |
| | | | | 120 | 50 |
| Dec. | 31 | | By Balance brought down..... | 15 | 50 |

AND DENISON. Cr.

| 1874. | | | | | |
|---|---|---|---|---|---|
| Jan. | 1 | 1 | By Goods..... | 150 | 00 |
| | | | | 150 | 00 |
| Dec. | 31 | | By Balance brought down..... | 45 | 10 |

AND BROS. Cr.

| 1874. | | | | | |
|---|---|---|---|---|---|
| Jan. | 1 | 1 | By Goods..... | 62 | 30 |
| | | | | 62 | 30 |
| Dec. | 31 | | By Balance brought down..... | 11 | |

## Lease of a Farm for a Term of Years.

THIS INDENTURE made the day of in the year of Our Lord, one thousand eight hundred and seventy between Joseph Salamander of Castana, County of Monona, and State of Iowa, of the one part and Jermiah Joskins of the same place of the other part. Witnesseth that the said Joseph Salamander for and on consideration of the yearly rent and covenants hereinafter mentioned and reserved on the part and behalf of the said Jermiah Joskins his heirs, executors and administrators to be paid, kept and performed hath demised set and to farm let and by these presents doth demise, set, and to farm let unto the said Jermiah Joskins, his heirs and assigns, all that certain messuage or tenement, tract, piece or parcel of land, situate in Castana aforesaid, adjoining lands of and now in the tenure and occupancy of containing acres, be the same more or less together with all and singular the buildings' improvements, and other the premises hereby devised with the appurtenances. To have and to hold the same unto the said Jermiah Joskins, his heirs and assigns, from the day of next ensuing the date hereof, for and during the term of years, thence next ensuing, and fully to be completed and ended: the said Jermiah Joskins yielding and paying for the same unto the said Salamander his heirs and assigns, the yearly rent or sum of on the day of on each and every year during the term aforesaid; the first payment of which said yearly rent or sum of is to be made on the day of A. D., 18 [*If the rent is payable in produce after the words* [yielding and paying] *proceed as follows:* There unto the said Salamander, his heirs and assigns, for the yearly rent as follows: one-half of all the winter grain, &c.] And at the expiration of the said term, he the said Joskins, his heirs and assigns, shall and will quietly and peaceably surrender and yield up the said demised premises, with the appurtenances unto the said Salamander, his heirs and assigns, in as good order and repair as the same now are, reasonable wear tear and casualties which may happen by fire or otherwise only excepted.

IN WITNESS whereof, the said parties have hereunto set their hands and seals the day and year aforesaid.

Signed, Sealed and delivered inthe presence of

ISIAH OLDCRUST. } *Joseph Salamander.*
TIMOTHY HARDSHELL. } *Jermiah Joskins.*

SEAL.

## HOW TO OPEN AND KEEP A BANK ACCOUNT.

The importance and convenience of keeping a Bank account, cannot be over estimated to the man of business. Through it he can not only deposit his cash, checks and daily balances, and thus relieve himself of care and responsibility, but in the payment of his debts and bills, it has the same feature of convenience, security and safety He draws on the bank and avoids the risk of handling money; it is safer, also, for the holder of the check; it guards both parties against theft loss and frequently fraud. The bank besides assuming the payment of your check, also assumes the responsibility of making the payment to the party named in your order. The bank also endorses your credit by the means

of a certified check to any part of the world. The return of the check with the endorsement of the party in whose favor it was drawn, is a positive proof that he received the amount.

To open an account it is generally necessary to give reference to some respectable house who will be willing to guarantee the applicant's responsibility. The signature of the dealer is then placed in a book called the "*Signature Book*," which is kept and refered to in case of any doubt that may arise, regarding the correctness of the signature attached to checks and thus prevent fraud. In the case of a firm opening an account, the person or persons who are authorized to sign the firm name, are required to sign in the Signature Book. The entry will be as follows:

| *Signatures.* | *Business.* | *Location.* | *Reference.* |
|---|---|---|---|
| W. Brown, Brown, Jones & Robinson.<br>H. Jones, Brown, Jones & Robinson. | Printers. | 21 Ann st. | Smith & Co. |

Everything being satisfactory, the first deposit is now made to the Receiving Teller, who then gives the dealer a Bank Book in which the amount deposited is entered, and a Check Book containing blank orders for the repayment of money deposited. Each check, when properly filled up, the required amount distinctly stated in writing and in figures and signed by the dealer is cashed at once by the paying teller when presented, providing there be sufficient funds standing to the depositor's account. Checks when paid are held by the Bank as vouchers against the depositor's account, but when his Bank Book is balanced they are returned to him. The Bank Book should be left for this purpose at least once a month. Sometimes the Teller may refuse to cash a check when presented, either because the person presenting it is not satisfactorily identified, or the bank may be short of funds. In this case he writes his signature across its face and stamps it with the Bank stamp. This is a guarantee that the check is good and may pass from hand to hand, or place to place, wherever the credit of the Bank is acknowledged before it is finally cashed. When a check is certified it is immediately charged as paid against the account of the Depositor, because thereafter the Bank assumes the responsibility of its payment. Should a certified check not be used, it must be redeposited precisely the same as cash.

Constant care and attention is required by the depositor to keep the account correct, and to see that there are alway sufficient funds to meet all the checks he may give out. Unless this is attended to, he will be in danger of losing the confidence of the Bank, and may be deprived of its advantages altogether.

## Book-Keeper's Proof.

It often happens that an error occurs in a single column of figures, and as there may be no other entries wherewith to compare the product of the sum, it may be a work of difficulty to detect the mistake; to obviate this and to afford a test for the accuracy of the calculation by a different process, some book-keepers prove a single column in the following manner. Suppose in the first instance we have a column, thus:—

| |
|---|
| 1,728 41 |
| 1,932 53 |
| 7,484 67 |
| 3,158 51 |
| 6,347 63 |
| 20,651 75 |

Now add up each line of figures in the column separately, and set the sum of each down in the following manner:

| |
|---|
| 18 |
| 24 |
| 22 |
| 29 |
| 26 |
| 15 |

Add these together and it will give the sum of

20,651 75

and in this wise prove the correctness of the first computation.

**Banks.**—The word is from the Italian word *banco* (bench), from the custom of the Jews to assemble in the market-place, seated upon benches, loaning money at enormous rates of interest. The Bank of Venice was the first banking institution of importance. It was founded in 1171, during the Crusades.

The Bank of Amsterdam was established in 1609.

The Bank of England was chartered in the reign of William and Mary, 1693.

**The Bank of France** was organized in 1803. In 1781 Robt. Morris proposed a bank, to be called the Bank of North America, which went into operation with a capital of $400,000.

**The Bank of the United States** went into operation in 1791, with a capital of $10,000,000. It was revived several times, only to cease to exist in 1836.

The Bank of New York was opened in the Walton House, in 1784.

In 1799 the Bank of the Manhattan Company was started, with Aaron Burr as one of its managers.

In 1812 there were 89 banks, with an aggregate capital of $40,000,000.

**National Banks,** as they are now, were organized in 1864, mainly out of the old State banks. They are banks of deposit, discount and circulation. They enjoy peculiar advantages, having, in addition to the profits of discounting, the interest on the bonds deposited with the Treasury Department to secure their circulation, and the use of their circulation itself. There are 2,087 National Banks, with an aggregate capital of $500,000,000. The amount of bonds to secure national notes is about $360,000,000. The amount of notes in actual circulation is about $310,000,000, with 675 million of deposits.

**State Banks** are banks of deposit and discount only, and their business and standing depend mainly upon local causes and the individuals who manage them. There are 907 State Banks, with a total capital of $164,366,669.

**Savings Banks** are banks of deposit, only allowing interest on all sums left with them for a certain length of time. It is said one was founded in Hamburg in 1778; also at Berne, Switzerland, in 1787. The Savings Banks of this country now have on deposit the surplus earnings of the laboring classes, amounting to about $1,000,000,000—an immense amount, when we consider the short time in which it must have been accumulating. There are 166 Savings Banks and 2,375 Private Banks in this country.

**Bank Rules.**—The rules of banks vary so in different localities, it is impossible to put them in positive form. Savings

banks usually pay a little less than the regular rates for money —usually about 5 per cent.

Business banks are usually open from 10 A. M. to 3 P. M.

Make your deposits early in the afternoon.

List bills and checks separately on your deposit ticket, laying the former all one way.

See that your deposit is correctly entered on your book before leaving the bank.

Leave your book every thirty days to be balanced.

Strangers presenting notes, drafts or checks, payable to order, must in all cases be identified by some one who knows them and is known at the bank.

**Bank Laws.**—Banks may own such real estate only as is necessary for transaction of business, but cannot speculate or hold real estate as an investment. Banks cannot take usury in any form. A bank may reject its bills if stolen, the forging of one signature invalidating a bill. The certification of a note or check makes the bank liable; a verbal certification is sufficient to hold the bank. The payment of a raised or altered check by a bank is its own loss. A bank must not pay a check before its date; if it does so, it must take the risk. A forged check paid to a *bona fide*, innocent holder, is the bank's loss, and the amount cannot be recovered. Share-holders are liable for all the acts of the bank's officers to double the par value of their stock. A depositor may stop the payment of any note or check by notifying the bank, which must refuse to pay it. A bank is responsible for paper left for collection; and, if worthless money or check is received for it, it is the bank's loss. It is the duty of a bank to pay all paper of a depositor payable at his bank, when properly presented; the bank is liable if it fails to do so. The bank is bound to the strictest secrecy, and must not divulge anything to damage its customers. If an account is not good for a check, and the holder will surrender it for the balance of the account, crediting it on the check, the bank must pay it; a bank, however, is not bound to pay the amount of a check, under any circumstances, when not good. Checks payable "to order" must be paid only to the proper person named therein.

**Commercial Paper.**—Bills of Exchange and their legitimate offsprings, checks, notes, and drafts, have formed a most important factor in the world's financial history. They originated among the Jewish money changers on the Mediterranean coasts, during the fourteenth century. Negotiable paper may be divided into Bills of Exchange (Drafts), the Prommissory Note, and Checks.

**The Duty of the Holder of a Draft.**—Immediately after receiving a draft, the payee or holder should present it for ac-

ceptance to the drawee, if payable after sight or date, or for payment; if drawn at sight, the drawee will, if correct, accept or pay it, but if he does not, it should be immediately protested if a foreign bill; or if a domestic draft, the drawer and endorser (if any). If a time draft is accepted, the duties of a holder are similar to that of a payee of a note.

Laws and Decisions in relation to Notes, Drafts, etc. Three days' grace are allowed on prommissory notes. Bills of exchange or drafts drawn payable at sight, at any place within this State, shall be deemed due and payable on presentation without any days of grace being allowed thereon. All checks, bills of exchange, or drafts, appearing on their face to have been drawn on any bank or individual banker, payable on any specific day, or in any number of days after the date or sight thereof, shall be due and payable on the day mentioned, without days of grace, and it is not necessary to protest the same for non-acceptance. All notes in writing, made and signed by any person, whereby he shall promise to pay to any other person or his order, or to the order of any other person, or unto the bearer, any sum of money therein mentioned, shall be due and payable as therein expressed, and shall have the same effect, and be negotiable in like manner, as inland bills of exchange, according to the custom of merchants. Every such note, signed by the agent of any such person, under a general or special authority, shall bind such person, and shall have the same effect, and be negotiable as above provided. The word "person" shall be construed to extend to every corporation capable by law of making contracts. The payees and endorsees of every such note payable to them or their order, and the holders of every such note payable to bearer, may maintain actions for the sums of money therein mentioned, against the makers and endorsers of the same respectively, in like manner as in cases of inland bills of exchange, and not otherwise. Such notes, made payable to the order of the maker thereof, or to the order of a fictitious person, shall, if negotiated by the maker, have the same effect and be of the same validity as against the maker and all persons having knowledge of the facts, as if payable to bearer. Demand of payment must be made on the day of payment in oder to hold the endorser liable, and if not paid must be protested, and a note of protest served on the endorser. Makers and endorsers can be sued in one action.

Notes or drafts falling due on Sundays, and all legal holidays, are payable on the day next preceding.

Paper of all kinds should, when possible, be made payable at a bank or bankers; but when payable at a residence or

place of business, it must be presented there during ordinary business hours.

Banks usually notify drawers or acceptors when not made payable at a bank or bankers, when their paper is due, and if not attended to before the closing of the bank, it is given to a notary, who then presents it, and if it is not paid, protests it. In such cases it is much better to attend to it in time, as much annoyance, and frequently expense, is saved by promptness. The notary's fees depend upon its being protested; consequently, he is not anxious to have it paid after it gets into his hands.

Notes and Drafts do not draw interest unless the words "with interest" or "with use" is inserted in them. It is not necessary to insert "for value received."

Banks will accept only certified checks, or the money in payment of paper, from strangers. Checks should be drawn to the order of the bank, or endorsed by a person known at the bank.

Notes made by a married woman, to be binding, should have the words "I hereby charge my private estate," or "Value received for benefit of my private and separate estate," inserted in them.

**Checks.**

NEW YORK, March 1st, 1881.

*The Atlantic National Bank,*

Pay to Geo. Ward.....or order (or bearer),
One Hundred.....Dollars.
$100.00

ALFRED BEERS.

A bank check is a written order to a bank or banker, directing the payment of a certain sum to a person therein named, or to bearer. It differs quite materially from other forms of negotiable paper, being due immediately upon presentation. The drawer of a check is never entirely released from liability through failure, on the part of the holder, to present, except in so far as he may be damaged by such negligence. It is not customary, in business centers, to protest checks, yet it is necessary to notify prior endorsers, within a reasonable time, if payment should be refused, the drawer, as I have said, being responsible, without notice, unless some special damage can be shown to have resulted therefrom.

**Laws relating to Checks.**—There is no legal difference between a note or check payable to bearer or a particular person or bearer. A note or check payable to a fictitious person is in effect payable to bearer. There is no legal objection to a note or check dated on Sunday. When date or amount is left

blank, it may be filled up, the amount to correspond with the marginal figures; the date should be the day it was drawn. Checks are similar to bills of exchange, payable on demand, and are not entitled to grace under any circumstances. A check should be presented upon the drawee within a reasonable time; but, if the drawee does not fail, or no damage can be shown resulting to drawee by want of diligence in presenting, he is in no way released. If the drawee have no funds in the bank, or the bank is restrained by order of the Court from doing business, presentment is excused, because the law does not require the performance of acts which are merely ceremonial and nugatory, and the drawee is not injured by the omission. In an action against a drawee of a check, the holder cannot, in general, recover unless he shows that it has been presented for payment and dishonored, and that notice of nonpayment has been properly given. If the sum for which a check is drawn be fraudulently altered and increased, and the bank pay the raised amount, it must itself bear the loss. The death of the drawee is generally considered as a revocation of the banker's authority to pay a check; but if it be paid before notice of such death the payment is good.

**Wills.**—A person making a will is the *testator;* or, if a female, *testatrix.* Real estate is a *devise;* personal property a *legacy.* No precise form is essential to the validity of a will, but it is important that the wish of the testator be put in clear and unmistakable language, and that it be subscribed by at least two witnesses. A will is of no effect until the death of the testator. The act of one executor is the same as the act of all which refers to the delivery or sale of the testator's goods.

**Commencement of Suits.**—In commencing a suit, the plaintiff must state in his complaint facts sufficient to establish a cause of action. The defendant, in his answer, must make either a general or specific denial of each material allegation in the complaint.

**Contracts** are agreements, upon sufficient consideration, to do or not to do a particular thing. Verbal evidence is allowed to explain, but not to vary a written agreement. When a person puts in the post office an acceptance of a proposition made through mail by another, the contract is complete. To render a contract usurious, the interest must be received at the time of the agreement. Where no particular time is mentioned, it is presumed that the thing to be done, is to be done immediately.

**Landlord and Tenant.**—Leases should be written; each party having an original. The landlord is bound to secure to the tenant the quiet enjoyment of the premises leased, and, in the absence of an express covenant to the contrary, is bound

to keep the premises in a habitable condition. If a tenant makes an unconditional covenant to repair, he can be compelled to rebuild the premises, if destroyed; he is bound to repair all injuries occasoned by his own negligence. If he assigns his lease, he is still responsible for the rent, unless released by his landlord. The tenant may remove anything he may have added to the premises, providing he does not injure them in so doing, or it has not been so added as to become a portion of the premises itself.

**Summons** are served on commencement of suit in Justices' and District Courts. A long summons is the usual process, and must be served not less than six or more than twelve days before the time for appearance. A short summons, usually served upon non-residents, must be served not less than two or more than four days before time of appearance mentioned therein.

**Attachments** may be issued against the real or personal property of an absconding, concealed or non-resident debtor.

**A Married Woman** is bound by all contracts relating to her own private property. The law protects the property she owned at the time of her marriage, and its rents, issues and profits.

Her contracts in respect to her property are not binding upon her husband.

**Arrests** are allowed when a debtor is guilty of fraud in obtaining or keeping property, or when he retains stock or money with fraudulent intent. But no female shall be arrested, in any action, except for a wilful injury to person, character or property.

**Lost Time.**—313 working days in a year, 10 hours per day—

| | Days. | Hrs. | M. |
|---|---|---|---|
| 5 minutes lost each day is, in a year | 2 | 6 | 5 |
| 20 " " " " | 13 | 0 | 20 |
| 60 " " " " | 39 | 1 | |

**An Acre,** 20 feet front and 2,187 feet deep.
40 " " 1,089 "
50 " " 876⅕ "
100 " " 435½ "

A team must travel 8½ miles to plough one acre, turning a foot slice.

**A Certain Test for Gold or Silver** is a piece of lunar caustic. Slightly wet the metal to be tested, and rub it with the caustic. If gold or silver, the mark will be faint; but, if an inferior metal, it will be black.

**Interest Rules.**—The commercial year consists of 360 days, 30 days to the month.

***4 per cent.*** Multiply the principal by number of days, divide by nine, and points off.

***5 per cent.*** Multiply by number of days and divide by 72.

***6 per cent.*** Multiply by number of days, divide by 6, and point off three figures from the right.

**Shoemakers' Measure.**—Shoes are measured by the size of the *last*. No. 1, children's measure, is $4\frac{2}{3}$ inches; every additional number is one barleycorn, or $\frac{1}{3}$ of an inch longer. No. 1, adult's measure, $8\frac{1}{2}$ inches long; each size larger is $\frac{1}{3}$ of an inch longer. No. 9 is $11\frac{1}{6}$ inches.

**Size of Nails.**

| | | | | |
|---|---|---|---|---|
| 2 | penny, | 1 | inch, | 557 nails per pound. |
| 4 | " | $1\frac{1}{4}$ | inches, | 353 " " " |
| 6 | " | 2 | " | 167 " " " |
| 8 | " | $2\frac{1}{2}$ | " | 101 " " " |
| 12 | " | 3 | " | 54 " " " |

**A Cubic Foot** of soil weighs 124 pounds; clay, 135; lead, $708\frac{3}{4}$; brass, $534\frac{3}{4}$; copper, 555; wrought iron, $486\frac{3}{4}$; coal, $50\frac{55}{100}$; charcoal, $18\frac{1}{2}$; cork, 15; bricks, 125; granite, 165; oak wood, 55; pine, 35.

**Bank Discount.**—To find it. Cast the interest on the face of the note or draft for three days more than the specified time; the result will be the discount. The discount subtracted from the face of the note will give the present worth of a note discounted at a bank. If you want to find what sum, payable in a specified time, will give you a certain amount when discounted, divide the given amount to be raised by the present worth of $1, for the time at the rate of discount, and the answer will be the sum required.

**Mensuration.**—The diameter given to find the circumference; multiply the diameter by 22 and divide it by 7. The circumference given to find the diameter, multiply the circumference by 7 and divide by 22. To measure inch boards, multiply its breadth in inches by its length in feet, and divide the product by 12; the answer is its contents in square feet. To find the contents (board measure) of boards, planks, etc., multiply the thickness in inches by the width in inches and that product by the length in feet, which last product divide by 12.

**Rapid Multiplication.**—When the unit figures added equal ten, and the tens are alike, multiply the units and set down the result; add one to either numbers, in ten's place, and multiply by the other, and you have the product.

To multiply any number by $66\frac{2}{3}$ add 3 ciphers and divide by 15.
" " " $166\frac{2}{3}$ " " " " " 6.
" " " 125 " " " " " 8.

The three ciphers increase the number to be multiplied one thousand times, or two ciphers one hundred times, and divid

ing it by the number of times the multiplier is contained in 100 or 1,000 gives the product.

To multiply any number of two figures by 11, write the sum of the figures between them.

**Odd Questions.**—Q. What is the difference between twenty four-quart bottles and four and twenty quart-bottles?

A. 56 quarts difference.

Q. If five times 4 are thirty-three, what will the fourth of 20 be?

A. 8¼.

Q. If you cut thirty yards of cloth into one-yard pieces, and cut one yard every day, how long will it take?

A. Twenty-nine days.

Q. What is the difference between six dozen dozen and a half dozen dozen?

A. 792. Six dozen dozen is 864; half a dozen dozen is 72.

Place three sixes together so as to make seven—6⅔.

A cheese being put into one of the scales of a false balance was found to weigh 16 lbs.; when put into the other only 9 pounds; what was the true weight? The true weight is the mean proportional between the two false ones, and is found by extracting the square root of the product. Thus 16 x 9—144; and square root, 144—12 lbs., the true weight.

**Counterfeits.**—The art of imitating genuine money probably originated as soon as money was used. Genuine money is not much mentioned in ancient history, and we read very little of counterfeits. Gold, in modern times, has been very successfully counterfeited, and lead and pewter silver pieces were often seen in circulation. State bank bills were counterfeited, bills issued on banks which never existed, and various ways were successfully adopted to defraud people handling money previous to the issue of Greenbacks.

HOW COUNTERFEIT NOTES ARE MADE.

A party of men, say from three to a dozen, get together and hold frequent meetings, and act according to a plan laid down. One or two will find out some copper-plate printer in the employ of the bank note company—in fact, all such printers are known by the party. These men will then manage to meet one of the printers in the evening, get acquainted, drink, and have a good time generally with him, and so proceed for a few evenings. Then they offer him from $50 to $100 to procure a certain kind of impression. This impression is made in this wise: The printer will take the impression upon tin-foil from the plate from which he is printing, which can be done in a moment. Thus you see every line, and the size is obtained correctly. From this tin-foil an electrotype plate is made. They then get some plate printer that can be found

about the city, have a good time with him, and engage him at twenty dollars a day to do the printing. By this plan thousands of copies are struck off that defy detection, except in the quality of the paper, which will differ from the genuine.

They are also engraved from the bills themselves, but it is a strange fact that in no case have they been precisely like the genuine.

**Greenbacks.**—The latter issues of greenbacks have not been counterfeited to any great extent, the patent fibre paper having proved an effectual safeguard against imitation. A few very good imitations of the old legal tender issues are still circulating. They, like the old genuine bills, are miserably executed, compared with the greenbacks now issued.

**Look Out For**—all issues of legal tenders prior to 1869, particularly the following:

1s, on U. S. Treasury notes (Greenbacks). The head of Chase is poorly engraved; the mouth is crooked. The back is light green.

2s, Greenbacks, issued Aug. 1st, 1862. Examine all 2s carefully.

5s, dated March 10th, 1862, and Feb. 25th, 1862.

10s, dated March 10th, 1862, letter C. The pink seal is badly done, but the general appearance is likely to deceive.

20s, same issue, are well engraved, the face particularly being well executed; the back is rather dark and blurred.

50s. The imitations of the first issues are very nearly as good as the genuine, and have deceived many good judges. Some very good imitation $500 notes are in circulation, issue of 1869.

50s, on new issue, 1869, are not good imitations, the patent fibre paper being but poorly imitated. They are so poor that but few of them are in circulation.

**National Notes.**—The getters-up of the *queer* have of late concentrated their efforts successfully on national notes. It is estimated that over forty million dollars in counterfeit national bank notes are in circulation. A complete list of these would confuse rather than aid a person in detecting them; we have therefore selected a few of the most dangerous. As soon as spurious notes are discovered, a circular is issued by the Treasury Department to banks, who are authorized to brand and destroy them whenever presented. The following are the principal counterfeits. Refuse them unless assured of their genuineness.

# Official List of Counterfeit National Notes.

## ONES.

National Eagle Bank..... ..Boston, Mass.

## TWOS.

Fourth National Bank.....New York, N. Y.
Ninth " ..... " "
Marine " ..... " "
Market " ..... ..... " "
St. Nicholas " ..... " "
Union " ..... " "
Union K " ..... ....Kinderkook, "
Westchester Co. " .....Peekskill, "
Sixth " .....Philadelphia, Pa.
Newport, " .....Newport, R. I.
National Union Bank (No such Bank). Linden Park, N. Y.

## FIVES.

Globe National Bank.....Boston, Mass.
Merchants' " .....New Bedford, "
Hampden " .....Westfield, "
1st " .....Northhampton, "
1st " .....Aurora, Ill.
1st " .....Canton, "
1st " ..... .....Galena, "
1st " .....Chicago, "
3d " ..... " "
Merchants' " ..... " "
Traders' " ..... ..... " "
1st " .....Hanover, Pa.
1st " .....Tamaqua, "
Merchants' " .....New York, N. Y.
Marine " ..... " "
Manufacturers' National Bank....Amsterdam, "
Pacific " ....Boston, Mass.

## TENS.

Westchester Co. National Bank....Peekskill, N. Y.
1st " ....Poughkeepsie, "
Farmers' & Manfrs' " .... " "
Flour City " ....Rochester, "
City " ....Auburn, "
Farmers' & Mechanics' " ....Buffalo, "

| | | | |
|---|---|---|---|
| 1st | National Bank.... | Palmyra, | N. Y. |
| Tioga | " | ... Owego, | " |
| 1st | " | ....New York, | " |
| 9th | " | .... " | " |
| Marine | " | .... " | " |
| Mechanics' | " | .... " | " |
| Tradesmens' | " | .... " | " |
| Union | " | .... " | " |
| Lafayette | " | ....Lafayette, Ind. | |
| Richmond | " | ....Richmond, " | |
| 1st | " | ... Paducah, Ky. | |
| 1st | " | ....Philadelphia, Pa. | |
| 3d | " | .... " | " |
| 1st | " | ....Whitehall, N. Y. | |

## TWENTIES.

| | | | |
|---|---|---|---|
| Central National Bank..... | | New York, | N. Y. |
| National City Bank. ..... | | " | " |
| Market National Bank..... | | " | " |
| Mechanics' " ..... | | " | " |
| National Bank State of New York. | | " | " |
| National Bank of Commerce..... | | " | " |
| Shoe and Leather National Bank. | | " | " |
| Tradesmans' | " | " | " |
| Utica City | " | Utica, | " |
| 1st | " | " | " |
| Oneida | " | " | " |
| 1st | " | Plainfield, N. J. | |
| 1st | " | Indianapolis, Ind. | |
| 1st | " | Chicago, Ill. | |
| 1st | " | Paducah, Ky. | |
| 1st | " | Portland, Conn. | |

## FIFTIES and ONE HUNDREDS.

| | | | |
|---|---|---|---|
| 1st National Bank..... ..... | | Boston, Mass | |
| City " ..... ... | | Lynn, " | |
| City " ..... | | Auburn, N. Y. | 50s. |
| 1st " ..... | | Elmira, " | 100s. |
| 1st " ..... | | Jersey City, N. J. | |
| Ohio " ..... | | Cincinnati, O. | 100s. |
| 4th " ..... | | " " | 100s. |
| 4th " ..... | | New York, N. Y. | 50s. |
| National Exchange Bank..... | | Baltimore, Md. | 100s. |

**Canada Bills** are, if all right, worth nearly the same as gold coin. Refuse $4 and $10 bills on Consolidated Bank of Montreal, printed from genuine stolen plates, countersigned by W. Irwin.

## Failed Banks.

Mechanics' Bank of Montreal.
Bank of Western Canada.
Colonial Bank, Canada.
Westmoreland Bank, New Brunswick.
Commercial Bank, New Brunswick.
Bank of Acadia, Nova Scotia.
Zimmerman Bank.
Bank of Clifton.

## Counterfeits.

1's Dominion of Canada.
4's Dominion Bank, Toronto.
5's Dominion Bank, Toronto.
5's Bank of Commerce, Tor.
10's Ontario Bank.
10's Bank of British North A.

All the above are poorly done and easily detected by those used to handling money, with the exception of the $1 on Dominion of Canada. This bill is somewhat darker than the genuine; though by no means a finely-executed counterfeit, is well calculated to deceive the public.

Four dollar notes of the Canadian Bank of Commerce raised to $10's are in circulation in Toronto.

**Rules for Detecting Counterfeits.** A genuine note is the result of the combined skill of many superior artists, aided by the finest machinery money can procure. Counterfeits are usually gotten up by two or three engravers; while some part —the vignette, for instance—may be well executed, there is always an important defect somewhere. The finest work on bills is done by the *Geometric Lathe*, and cannot be equalled by any counterfeiters, that of the latter always having the scratched appearance of wood cuts. The ink used in imitations is seldom equal to that used in genuine notes, and when examined closely will be found of a dim, lustreless appearance, quite in contrast with the beautiful metallic appearing colors of the genuine.

The features of the portraits in counterfeits always have a hard, expressionless appearance, while in the genuine they are the most natural and life-like. In the historical scenes on the backs of national notes the figures and portraits in the counterfeits are seldom well executed, the eyes particularly being not much more than a dot, and hardly distinguishable. In the genuine they have a clear and expressive appearance.

An expert never studies a bad bill, but becoming perfectly familiar with good money, at once detects the slightest discrepancy. Counterfeits are never as well engraved or printed as genuine notes, and with care can always be detected. The following rules will help a person, but expertness can only be acquired by long experience and careful study.

Study carefully good bills of every issue in which there are counterfeits.

Notice carefully the engraving and printing, the general appearance of the bill. A microscope is a great aid in examining the finer work.

The paper, especially in issues on the patent fibre paper, is an excellent test.

The backs are not usually as good as the faces.

Counterfeits are usually darker than the genuine.

The first impression of a person accustomed to the handling of money is usually correct.

**Cut Bills.** A number of national notes (usually) are taken, and a little strip is cut from one, a little larger strip from the next, and the strip cut from the first is pasted in the place of it, and so on, until by skillful cutting, one extra bill out of about every ten is made. Each piece is from separate bills, frequently on different banks, so they are easily detected.

**Stolen Bills** are the most dangerous of worthless notes, and can only be detected by keeping a list of them; and refusing them is always the proper course.

The following include most of those which have been recently stolen:

## Stolen National Bank Blank Bills.

The National Bank notes described below were stolen before signed, the signatures of the Bank officers since forged, and the notes put in circulation. They are rejected when presented for redemption at the National Bank Redemption Agency.

**The National Bank of Barre, Vermont.....10s and 20s**
(Bank No. lower left hand corner—911 to 936.)
(Treas. No. upper right hand corner—932,805 to 932,830.)

**National Hide and Leather Bank, Boston, Mass.....10s and 20s**
(Bank No. lower left hand corner—11,919 to 11,972.)
(Treas. No. upper right hand corner—22,900 to 22,953.)

**First National Bank, Jersey City, N. J.....50s and 100s**
(Bank No. lower left hand corner—671 to 750.)
(Treas. No. upper right hand corner—19,609 to 19,688.)

**Merchants' National Bank, Albany, N. Y.....10s and 20s**
(Bank No. lower left hand corner—759 to 766.)
(Treas. No. upper right hand corner—45,195 to 45,202.)

**National City Bank, Lynn, Mass.....50s and 100s**
(Bank No. lower left hand corner—121 to 150.)
(Treas. No. upper right hand corner—66,796 to 66,825.)

**Third National Bank, New York, N. Y.....10s and 20s**
(Bank No. lower left hand corner—9,414 to 9,428.)
(Treas. No. upper right hand corner—644,416 to 644,430.)

**Osage National Bank, Osage, Iowa**.....**5s**
(Bank No. lower left hand corner—1,751 to 2,200.)
(Treas. No. upper right hand corner—560,958 to 561,407.)

**Northampton National Bank, Northampton, Mass**...**5s**
(Bank No. lower left hand corner—1 to 128.)

**National Bank of Pontiac, Ills**..... .....**5s**
(Bank No. lower left hand corner—741 to 765.)
(Treas. No. upper right hand corner—252,111 to 252,135.)

**Gold.**—The detection of spurious gold is no easy matter. Experts can usually detect it by the dull thud it makes when thrown upon the counter. Its size and weight is also considered a good test. The real acid test, however, is the only reliable one, and should be resorted to in all uncertain cases.

**Smooth Gold** is worth only its weight, and as gold, by very little wear, becomes *smooth* and subject to a discount, it is well to be careful in taking such pieces. Holes drilled in or pieces filed out of gold coin, or anything which lessens their weight, decreases their value proportionately. Gold Certificates are not counterfeited.

**Silver** is now being extensively counterfeited. Half dollars are more frequently imitated than Quarters and Dimes. "Jingling" them is quite a good test, but some are so minted that they give forth a dull, leaden sound, and still are genuine. In such cases nitric acid is the best test, and in some cases the only reliable one.

**Five Cent Pieces** (nickel) have been extensively counterfeited. They are usually easily detected, being made of pewter or some poor composition.

## Counterfeit United States Bonds and Interest-Bearing Notes.

**$50.** Compound-Interest Note, series of 1864, dated July 15, '64. Issued under act June 30, '64, payable 3 years after date. Signatures, L. E. Chittenden, Register; F. E. Spinner, Treasurer. "Compound-Interest Treasury Note" printed on face in gold letters.

**$50.** Compound-Interest Note, series of 1865, dated May 15, 1865. Same description as above.

**$50.** 7.30 Note, dated July 15, 1865; issued under act of March 3, 1865. S. B. Colby, Register; F. E. Spinner, Treasurer; payable 3 years after date and convertible into 5.20 U. S. bonds.

**$100.** Compound-Interest Note, series of 1865; dated May 15, 1865; issued under act June 30, '64; payable 3 years after date. Vignette of Geo.

Washington. The words "Compound-Interest Treasury Note" appear on face printed in gold letters.

**$1000.** 7.30 Note. S. B. Colby, Register; F. E. Spinner, Treasurer. Dated June 15, 1865. A very dangerous counterfeit.

**$1000.** 5.20 U. S. Coupon Bond; consol '67; 4th series; act Feb. 25, '62. Date May 1, 1862.

**$1000.** U. S. Coupon Bond, 6's of 1881. Acts of July 17 and August 5, 1861. Mature June 30, 1881.

### Penalty for Mutilating U. S. Coin.

We give below the law on this subject. Section 5459, Revised Statutes reads: "Every person who fraudulently, by any art, way, or means, defaces, mutilates, impairs, diminishes, falsifies, scales, or lightens the gold or silver coins which have been, or which may hereafter be, coined at the mints of the United States, or any foreign gold or silver coins which are by law made current or are in actual use and circulation as money within the United States, shall be imprisoned not more than two years and fined not more than two thousand dollars."

## ISSUE AND REDEMPTION OF SILVER AND NICKEL.

### Issue and Redemption of Fractional Silver Coins.

ISSUE OF FRACTIONNAL SILVER COINS.

1. The Treasurer and Assistant Treasurers of the United States will exchange Fractional Silver Coins in sums of twenty dollars, or any multiple thereof, for lawful money of the United States, on demand of any holder thereof.

2. The Treasurer will forward Fractional Silver Coins, at the expense of the Government, in return for remittances of Fractional Currency in sums of $500 or more.

3, The Treasnrer will forward Fractional Silver Coins, deducting express charges at the rate of three mills per mile for each $500 or multiple thereof—

I. Upon the receipt at this Office from any person of an original (duplicate will not do) certificate issued by an Assistant Treasurer or National Bank Depositary, that a deposit of Currency has been made to the credit of the Treasurer in general account. Deposits with the Assistant Treasurer in New York may be made by checks payable to his order, forwarded directly to him, with instructions to deposit the amounts on account of Fractional Silver Coins, and to forward the certificates therefor to the Treasurer.

II. Upon the receipt at this Office of United States Notes or National Bank Notes.

III. Upon the receipt and collection of a check on New York, payable to the order of the Treasurer of the United States.

### Redemption of Fractional Silver Coins.

1. The holder of any of the silver coins of the United States of smaller denominations than one dollar may, on presentation of the same in sums of twenty dollars, or any multiple thereof, at the office of the Treasurer or any Assistant Treasurer of the United States, receive therefor lawful money of the United States.

2. The coins for exchange should be put up by denominations, and each package marked with the amount it contains.

3. No coins mutilated so as to be unfit for circulation will be received.

4. When the coins are forwarded to the Treasury by express, they should be addressed to the Treasurer U. S., Washington, D. C.

## Issue and Redemption of Minor Coins.

### Issue of Minor Coins.

1. The Minor Coins of the United States of the denominations of one cent, three cents, and five cents, are issued and forwarded free of expense, upon application to the Superintendent of the Mint at Philadelphia, for lawful money of the United States in sums of $20, or multiples thereof. Remittances may be made by post office money orders or sight drafts to the order of said Superintendent, payable in New York or Philadelphia.

2. The Treasurer and Assistant Treasurers are authorized to pay out, for United States Notes, any Minor Coins not needed in the current business of their offices.

### Redemption of Minor Coins.

1. Coins of copper, bronze, and copper nickel may be presented in sums of $20, or multiples thereof, assorted by denominations and issues, at the Mint in Philadelphia, or to the Treasurer or any Assistant Treasurer, for redemption in lawful money.

2. A letter of advice should accompany the package, stating the amount and kind of coins, and the name of the owner.

3. Mutilated Minor Coins will not be redeemed or exchanged.

## GOLD.

| Denominations. | Coinage commenced | Standard weight, grains. | Weight prior to 1834, grains. | Abrasion allowed, in grains. | Least current weight, in grains. | Unless artificially reduced in weight, the following will be found within the limit of natural abrasion allowed by law. | Unless artificially reduced should continue current. |
|---|---|---|---|---|---|---|---|
| Double-eagle | 1850 | 516. | ..... | 2.58 | 513.42 | All coined | 50 years. |
| Eagle | 1793 | 258. | 270. | 1.29 | 256.71 | All coined since 1845 | 35 years. |
| Half-eagle | 1793 | 129. | 135. | 0.64 | 128.36 | All coined since 1858 | 20 years. |
| Three-dollars | 1854 | 77.4 | ..... | 0.38 | 77.02 | ..... | ..... |
| Quarter-eagle | 1796 | 64.5 | 67.5 | 0.32 | 64.18 | All coined since 1863 | 15 years. |
| Dollars | 1849 | 25.8 | ..... | 0.13 | 25.67 | ..... | ..... |

## SILVER.

| Denominations. | Coinage commenced | Coinage ceased. | Standard weight, grains. | Weight prior to 1837, grains. | Weight from 1837 to 1853, grains. | Weight from 1853 to 1873, grains. | Amount for which a legal tender. | No allowance for abrasion. | Redemption of silver. |
|---|---|---|---|---|---|---|---|---|---|
| Standard dollars. | 1878 | ..... | 412.5 | ..... | ..... | ..... | Unlimited | | Silver coins of smaller denominations than $1 may be presented in sums of $20, or any multiple thereof, to the Treasurer or any Assistant Treasurer of the U. S., for redemption in lawful money. |
| Trade dollars | 1873 | 1878 | 420. | ..... | ..... | ..... | Not a legal tender | | |
| Dollars | 1793 | 1873 | 412.5 | 416. | 412.5 | 412.5 | Unlimited | | |
| Half-dollars | 1793 | ..... | 192.9 | 208. | 206.25 | 192. | Ten dollars | | |
| Quarter-dollars | 1796 | ..... | 96.45 | 104. | 103.125 | 96. | Ten dollars | | |
| Twenty cents | 1875 | 1878 | 77.16 | ..... | ..... | ..... | Five dollars | | |
| Dimes | 1796 | ..... | 38.58 | 41.6 | 41.25 | 38.4 | Ten dollars | | |
| Half-dimes | 1793 | 1873 | 19.29 | 20.8 | 20.625 | 19.2 | Five dollars | | |
| Three cents | 1851 | 1873 | 11.52 | ..... | 12.375 | 11.52 | Five dollars | | |

## MINOR COINAGE.

| Denominations. | Coinage began. | Coinage ceased. | Stand. weight. | | Amount for which a legal tender. | Redemption of Minor Coinage. |
|---|---|---|---|---|---|---|
| Five cents | 1866 | ..... | 77.16 | No allowance for abrasion. | Twenty-five cents | Minor coins may be presented in sums of twenty dollars, or multiples thereof, assorted by denominations and issues, at the mint in Philadelphia, to the Treas'r or any Assis't Treas'r, for redemption in lawful money. *Mutilated minor coin will not be redeemed or exchanged.* |
| Three cents | 1865 | ..... | 30. | | Twenty-five cents | |
| Two cents | 1864 | 1872 | 96. | | Twenty-five cents | |
| Cents | 1793 | ..... | 48. | | Twenty-five cents | |
| Half cents | 1793 | 1857 | ..... | | Not a legal tender | |

## HOW TO ORGANIZE AND CONDUCT PUBLIC MEETINGS.

Every American believes that it is an inherent right in citizens to meet, organize, and then discuss any subject that they may deem fit to direct their attention to. To conduct such meetings so as to avoid confusion, and consequent disturbance, there is an unwritten law which every sensible man is willing to obey, and expects every other man to bow to. These rules are not enforced by any statute, but are the wise precedents worked out from time to time by our ancestors either in the old world or in the new. The British Parliament and the American Congress follow the same rules, with such slight deviations as the different forms of government demand. It matters not whether the persons meet to form a church or elect a president, the first requirement for success is that all should be done decently and in order. Any member can call a meeting to order by nominating a temporary chairman, who, if elected by an unquestioned majority, thanks the assembly, and asks what is their further order. Some one rises, and nominates a permanent chairman. Upon his election, the temporary chairman welcomes his successor to his seat. The chairman then addresses the meeting, thanking them in a speech, brief and to the purpose. No man should accept this position unless he is at least tolerably versed in the duties of his office. He should be sure in his decisions on points of order, and firmly maintain his findings as suavely as possible, but maintain them at all hazards. The meeting can now either vote for a secretary or direct the chair to select a proper person. The officers, having now the management of the meeting, proceed to business in the following order: The object of the meeting is stated; resolutions are to be handed in; votes taken on all motions duly seconded, and result stated: members debating questions to be kept in order; to receive communications, and have them read aloud; unless the meeting does so, it is for the chair to name committees; and generally to act as the personification of the good sense of the assembly.

The secretary records all transactions at chairman's desire; reads all papers; calls roll of members; reads record of previous meetings; calls the "yeas" and "nays;" notifies committees, and gives them needed papers; authenticates, at bidding of chair, all official papers; attends to correspondence, and makes reports.

A meeting is initiated by two or more people addressing a

circular, or by advertisement, stating object and asking attendance of all interested, at certain place and date.

At the hour appointed the meeting is organized in the manner already described. When a *motion* is made and seconded, debate is then in order. Usually the one presenting the resolution speaks, explaining its object. The chairman will then give the floor to the first person who rises and catches his eye. In the first two or three speeches the speakers may be allowed a little latitude ; but it is well, as soon as possible, to keep them in the traces, and confine the debate pretty close to the matter in hand. Always have a written resolution before the meeting, so that everything may proceed ship-shape. The chairman should scan the whole house, so that he may give every one a chance to attract his eye, whether the persons are near the platform or at a distance. In this, as in every other action of life, the true rule is to do as you would like to be done by. But it is not only the *chairman* who has duties. The *audience* has much to do with keeping order. After you have appointed a presiding officer, do not attempt to do his duty for him, by shouting "order," "order," and thus making confusion worse confounded. Where would a regiment be if every private was to give the word of command ? When a person has the floor and proceeds to speak, it is to be remembered that no one has a right to interrupt him, but by appealing to the chair, and asking that the speaker be called to order. On the other hand, no speaker is justified in making personal allusion to or questioning the motives of any other person in the meeting. Should any person so offend, the chairman owes it to the dignity of the assemblage to instantly call the offender to order, and insist that he be obeyed.

*A caucus* is an assemblage of members of any political party to adopt a course of action, or nominate a person for a certain office. The proceedings, with slight variations, as in the meeting already described.

*Political conventions* are composed of persons elected by their party to nominate suitable persons to represent such party.

Almost every class of persons, religious, scientific, etc., hold conventions, and the same rules apply to them all, with minor changes, that speak for themselves.

*Resolutions* may be presented either spoken or written—the latter way is preferable. Simple motions are usually spoken, as "Mr. Chairman, I move that we take a recess for half an hour," or any similar motion. A resolution duly offered, seconded and spoken to, can only be withdrawn by leave of the meeting. If during the debate a motion to adjourn is carried, the resolution goes into the unfinished business de-

partment, and can only be further acted upon when it comes up in due course at a following meeting.

*Amendments* may be proposed to add to the resolution, to explain or to alter. Amendments cannot be introduced to suit a whim; they must have a plain bearing on the matter of the resolution. The limit is reached at the second amendment or third proposition. An amendment can be offered to strike out some terms and insert others. No proposition once rejected can be offered again in different words.

*Division* may mean to divide on a vote, or to divide a question into two or more parts. A vote on a question being given, the chairman says: "The ayes have it," or "the noes have it." Any person can then call for a count. The meeting itself decides what number can demand the yeas and nays. A bare majority of both Houses of Congress make a *quorum* for business. When *appeal* is taken from ruling of chairman, if it is seconded, it may be debated. The chairman and any member may speak once on the subject. A *second* appeal cannot be made until the *first* is settled. The chairman may call any one to preside, and go upon the floor to speak; but this is only done on important matters. No person has a right to speak twice on the same subject.

*Privileged questions* are the motion to adjourn, the motion to lie on the table, and the motion for the previous question, and the motion to postpone.

Motions to reconsider are usually regulated by the sense of the meeting.

In legislative bodies the house is sometimes formed into *the Committee of the Whole*, when much latitude is given to debate, formality is less observed, and bills are got into shape.

During a discussion any person may raise the point, "no quorum present," and a call of the house follows. No member can come in, or leave, until the roll is called and the question decided.

"No more business before the meeting," says the chairman, and the motion to simply adjourn, or to adjourn *sine die*, must be at once decided, without discussion. The announcement must be formally made by the chairman, and that closes the meeting.

## A FARMER'S CLUB.

In a Farmer's Club, which has for its object social intercoure and the acquisition of knowledge, there need be few arbitrary rules of order enforced, but, instead, the discussions may be more or less conversational. But, as all business is facilitated by good regulations, the officers of the club ought to be armed with by-laws, and empowered to enforce their provisions whenever necessary.

### CONSTITUTION.

ART. 1.—This association shall be known as the Castana Farmer's Club. Its object shall be to promote a knowledge of practical Farming and Gardening among its members and the community, in connection with social enjoyments by the members and their families.

ART. 2.—The members of the club are those who frame this constitution and conform to its requirements, and others who may be invited to join by the executive committee, all of whom shall pay $00—annually in September (or monthly) into the treasury.

ART. 3.—The officers of the Club shall be a President, a Secretary, who shall be the Treasurer, and three members, who, with the President and Secretary, shall constitute the Executive Committee. The Secretary shall keep records of transactions, and be custodian of the funds and other property of the Club, being accountable at all times to the Executive Committee, giving bonds, if required, and shall prepare and present a full report to the Club at the annual meeting. The Executive Committee, three members of which shall be a quorum, shall have general charge of the interests of the Club and the carrying out of its objects. It shall fill vacancies among its officers, make rules, invite new members to join, regulate expenditures, manage exhibitions or fairs, publish offers of prizes and the awards, be responsible for the welfare of the Club, and report at the annual meeting through its Clerk.

ART. 4.—The meeting of the Club shall take place on the first Tuesday of each month; the meeting in January being known as the "Annual Meeting."

ART. 5.—This Constitution may be amended by a vote of two-thirds of the members present at any regular meeting, notice having been given at the preceding regular meeting.

## INSURANCE CLUB.

It is a wise practice in some social organizations, among the industrial classes, to agree upon a mutual guaranty of help in cases of sickness and decease. A portion of the Society dues is set apart as a Benefit Fund, for members who are in need of assistance and support. One form of benefit is presented by a guaranty of the expenses of a deceased member's funeral, and the form of an insurance article to that effect, in the By-Laws, may be as follows :

SEC. 1. On the decease of any member of this Society in good standing, each member shall pay one dollar and ten cents to the Treasurer, who shall pay one dollar of the same to the widow of the deceased member, or the nearest relative, and any member failing to pay when notified, the same shall be charged as dues ; and no member who shall be in arrears for three months will be entitled to receive the above.

SEC. 2. All officers and members of the Society shall attend the funeral of deceased members, and for non-attendance the officers shall be fined $1.00, and the members shall be fined 25 cts. Officers shall wear at all funerals a white rosette, and members a white ribbon, on the left lappel of their coats. The funeral arrangements shall be under the charge of a marshal, appointed by the President for that purpose.

SEC. 3. There shall be elected a chaplain, whose duty shall be to attend the funerals of the deceased members, and he may adopt such services as he shall think proper.

SEC. 4.—No member will lose his right in the above sections, except at his own request, on his taking his cards ; but he must keep at all times his residence registered in the books of the Society, and for neglect of so doing, or failure to pay his dollar and ten cents, after sixty days' notice, his name shall be dropped from the roll, and he shall cease to be a member of the Insurance. The ten cents shall be held to pay expenses, and the Treasurer shall, on the death of a member, report all money collected, with the expense thereof.

## BY-LAWS FOR A SOCIAL CLUB.

### ARTICLE I.

This Association shall be known as the Onawa Social Union.

### ARTICLE II.—OFFICERS.

SEC. 1. The Officers of the Union shall consist of a President, Vice-President, Recording Secretary, Treasurer and Marshal, who shall be elected at the first meeting in the month of October, and shall hold office one year.

SEC. 2. The President shall preside at all meetings, and in his absence the Vice-President shall perform his duties.

SEC. 3. The Secretary shall keep a true record of the proceedings of the Union.

SEC. 4. The Treasurer shall keep all property and moneys, and hold the same to the order of the Union, and keep a book with a correct account of all receipts and disbursements.

SEC. 5. The Marshal shall obey all official orders of the President.

### ARTICLE III.—MEMBERSHIP.

Propositions for membership must be made in writing, and presented at least one meeting prior to the time of election, and a majority of all the votes, on the payment of one dollar by the applicant, shall be necessary to admit to membership.

### ARTICLE IV.—COMMITTEES.

SEC. 1. The President shall, with the consent of the Union, appoint a committee of five, to be known as the Executive Committee, who shall hold office one year.

SEC. 2. The Executive Committee shall have charge of all Excursions, Balls, Parties, and all amusements.

SEC. 3. The officers of the Union shall be members of the Executive Committee.

### ARTICLE V.—ASSESSMENTS.

SEC. 1. No Assessment shall at any one time exceed one dollar.

SEC. 2. The name of any member failing to pay his assessment within thirty days after having been notified by the Treasurer, shall be dropped from the roll, and he shall cease to be a member.

SEC. 3. The By-Laws shall not be altered or amended unless notice shall have been given of the same at least two meetings previous, and then only by a two-third vote.

## DISCOVERY AND DISCOVERERS OF AMERICA.

| NAME. | PLACE. | TIME | NAME. | PLACE. | TIME |
|---|---|---|---|---|---|
| Chris. Columbus, | San Salvador, | 1492 | Jacques Cartier, | Gulf of St. L. | 1534 |
| John & S. Cabot, | Labrador, | 1497 | Hernan. Cortes, | California, | 1536 |
| Gaspar Cortereal | Canada, | 1501 | Ferd. de Soto, | Mississippi R | 1541 |
| Ponce de Leon, | Florida, | 1512 | Sam. Champlain, | R. St. John, | 1604 |
| Juan Verrazani, | Coast of N.C. | 1524 | Henry Hudson, | Hudson Riv. | 1604 |

## ABORIGINES OF NORTH AMERICA.

| NAME OF TRIBE. | RESIDENCE. | NO. |
|---|---|---|
| Apaches | New Mexico | 7,300 |
| Arapahoes | Upper Platte R. | 720 |
| Arapahoes | U. Arkansas R. | 3,000 |
| Arricarees | U. Missouri R. | 1,080 |
| Assinaboines | " " | 3,280 |
| Blackfeet | " " | 2,080 |
| Bloods | " " | 2,400 |
| Brules | " " | 1,120 |
| California Tribes, | California | 33,590 |
| Camanches | U. Arkansas R. | 1,800 |
| Cayugas, Senecas, | New York | 147 |
| Cherokees | W Arkansas R. | 17,530 |
| Cheyennes | U. Platte Riv. | 1,800 |
| " | U. Arkansas R. | 1,600 |
| Chickasaws | W. Arkansas R. | 4,787 |
| Chippewas of Lake Superior, Michigan, Wisconsin, and Minnesota, | | 4,940 |
| Ch. of the Miss. | Minnesota | 4,028 |
| Ch. and Ottawas, | Michigan | 5,006 |
| Ch. of Saginaw & Swan Creek | Michigan | 1,629 |
| Chippewas, with Pottawatomies | Michigan | 247 |
| Choctaws | W. of Arkansas, | 16,000 |
| Christian, or Munses | Kansas | 90 |
| Creeks | W. of Arkansas, | 25,000 |
| Crows | U. Missouri R. | 3,900 |
| Delawares | Kansas | 1,071 |
| Gros Ventres | U. Missouri R. | 1,000 |
| Iowas | Nebraska | 291 |
| Kansas Kaws, &c. | Kansas | 741 |
| Kaskaskias, Weas Peories, W. Miamies, and Piankeshaws | Kansas | 384 |
| Kickapoos | Kansas | 340 |
| Kiaways | U. Arkansas R. | 1,800 |
| Mandans | U. Arkansas R. | 120 |
| Menomonees | Wisconsin | 1,724 |
| Miamies | Indiana | 384 |
| Missouris and Ottoes | Nebraska | 470 |
| Minnecongonx | U. Missouri R. | 1,280 |
| Muhuache Utahs, | New Mexico, | 566 |
| Navajoes & Moquis | New Mexico | 15,000 |
| Omahas | Nebraska | 953 |
| Onondagas | New York | 422 |
| Oneidas | " " | 160 |
| " with Onondagas | " " | 70 |
| " with Stockbridge, &c. | Wisconsin | 323 |
| Oregon Tribes | Oregon | 13,000 |
| Osages | W. of Arkansas, | 4,098 |
| Pawnees (4 bands) | Nebraska | 3,414 |
| Primos Mescaleros, &c. | New Mexico | 400 |
| Poncas | Nebraska | 864 |
| Pottawatomies, with Kickapoos, | Kansas | 69 |
| Do. of Huron | Michigan | 50 |
| Do. at Agency pro. | Kansas | 2,259 |
| Pueblos | New Mexico | 10,000 |
| Quapaws | W. of Arkansas, | 314 |
| Sacs and Foxes (Miss.) | Kansas | 1,280 |
| Sacs and Foxes (Mo.) | Nebraska | 96 |
| Sans Arcs | U. Missouri R. | 1,600 |
| Senecas | New York | 2,988 |
| Do., with Shawnees | W. of Arkansas | 159 |
| Seminoles | W. of Arkansas | 2,500 |
| Shawnees | Kansas | 830 |
| Sioux of the Miss. | U. Missouri R. | 8,686 |
| Sioux of the Mo. | U. Platte R. | 6,000 |
| Stockbridge, with Munsees | Wisconsin | 323 |
| Tuscaroras | New York | 305 |
| Two Kettles | U. Missouri R. | 960 |
| Utah Tribes | Utah | 1,200 |
| Utahs (N. Mex.), | New Mexico, | 2,500 |
| Uncopapas | U. Missouri R. | 2,680 |
| Wash. Ter. Tribes, | Wash. Ter. | 14,000 |
| Winnebagoes | U. Missouri R. | 2,256 |
| Wyandots | Kansas | 435 |
| Yanctonnais (Mo.) | U. Missouri R | 3,840 |
| **Total** | | **260,079** |

## EARLY SETTLERS AND SETTLEMENTS OF THE UNITED STATES.

| STATE. | SETTLERS. | TIME | STATE. | SETTLERS. | TIME |
|---|---|---|---|---|---|
| Maine | English | 1625 | Mississippi | French | 1716 |
| N. Hampshire | " | 1623 | Louisiana | " | 1699 |
| Vermont | " | 1724 | Texas | Spanish | 1697 |
| Massachusetts | Puritans | 1620 | Arkansas | French | 1836 |
| Rhode Island | " | 1634 | Tennessee | Vir. & N. Car., | 1765 |
| Connecticut | " | 1631 | Kentucky | Virginia | 1775 |
| New York | Dutch | 1614 | Ohio | Vir. & N. Eng., | 1788 |
| New Jersey | Swedes | 1607 | Michigan | French | 1670 |
| Pennsylvania | English | 1631 | Indiana | " | 1730 |
| Delaware | Swedes | 1627 | Illinois | " | 1749 |
| Maryland | " | 1634 | Wisconsin | " | 1670 |
| Virginia | English | 1607 | Iowa | N. & E. States. | 1832 |
| North Carolina | English | 1650 | Minnesota | Fr. & States | 1845 |
| South Carolina | " | 1689 | Missouri | French | 1763 |
| Georgia | " | 1733 | California | All Nations | 1769 |
| Florida | Spanish | 1580 | Oregon | " " | 1840 |
| Alabama | French | 1713 | Kansas | Mass., Ct., Mo., | 1854 |

## TROOPS OF THE AMERICAN REVOLUTION.

| STATES. | REG'L'S. | MILITIA. | STATES. | REG'L'S. | MILITIA. |
|---|---|---|---|---|---|
| New Hampshire | 12,496 | 2,093 | Delaware | 2,317 | 376 |
| Massachusetts | 68,007 | 15,145 | Maryland | 13,912 | 4,127 |
| Rhode Island | 5,093 | 4,284 | Virginia | 25,668 | 5,620 |
| Connecticut | 32,029 | 7,702 | North Carolina | 7,263 | ------ |
| New York | 18,331 | 3,304 | South Carolina | 6,417 | ------ |
| New Jersey | 10,726 | 6,055 | Georgia | 2,679 | ------ |
| Pennsylvania | 25,322 | 7,327 | Tot'l Slave States. | 58,256 | 10,123 |
| Total in Free States, | 172,819 | 45,910 | Grand Total | 231,075 | 56,033 |

## BATTLES AND LOSSES OF THE REVOLUTIONARY WAR.

| | BRIT. | AMER. | | BRIT. | AMER. |
|---|---|---|---|---|---|
| Lexington, April 19, 1775, | 273 | 84 | Red Hook, Oct. 22, 1777, | 500 | 32 |
| Bunker Hill, June 17, 1775, | 1,054 | 456 | Monmouth, June 25, 1778, | 400 | 130 |
| Flatbush, Aug. 12, 1776, | 400 | 280 | R. Island, Aug. 27, 1778, | 260 | 114 |
| White Pl'ns, Aug. 26, 1776, | 400 | 400 | Briar Creek, Mar. 30, 1779, | 13 | 400 |
| Trenton, Dec. 25, 1776, | 1,000 | 9 | Stony Pt., July 15, 1779, | 600 | 100 |
| Princeton, Jan. 5, 1777, | 400 | 100 | Camden, Aug. 16, 1779, | 375 | 610 |
| Hubbardstown, Aug. 7, '77, | 800 | 800 | King's Mt., Oct. 1, 1780, | 950 | 96 |
| Bennington, Aug. 16, 1777, | 800 | 100 | Cowpens, Jan. 17, 1781, | 800 | 72 |
| Brandywine, Sept. 11, 1777, | 500 | 1,000 | Guilford, March 15, 1781, | 531 | 400 |
| Stillwater, Sept. 17, 1777, | 600 | 350 | Hobkirk Hills, Ap. 25, '81, | 400 | 460 |
| Germantown, Oct. 5, 1777, | 600 | 1,250 | Eutaw Spr'gs, Sept. 1781, | 1,000 | 550 |
| Saratoga, Oct. 17, 1777 (sur) | 5,752 | .... | Yorkt'n, Oct., 1781 (sur.), | 7,072 | ... |

## DECLARATION OF INDEPENDENCE.

WHEN, in the course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another, and to assume, among the powers of the earth, the separate and equal station to which the laws of Nature and Nature's God entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation.

We hold these truths to be self-evident: that all men are created equal; that they are endowed by their Creator with certain inalienable rights; that among these are life, liberty, and the pursuit of happiness. That to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed: that whenever any form of government becomes destructive of these ends, it is the right of the people to alter or to abolish it, and to institute a new government, laying its foundation on such principles, and organizing its powers in such form as to them shall seem most likely to effect their safety and happiness. Prudence, indeed, will dictate that governments long established should not be changed for light and transient causes; and accordingly all experience hath shown that mankind are more disposed to suffer, while evils are sufferable, than to right themselves, by abolishing the forms to which they are accustomed. But when a long train of abuses and usurpations, pursuing invariably the same object, evinces a design to reduce them under absolute despotism, it is their right, it is their duty, to throw off such government, and to provide new guards for their future security. Such has been the patient sufferance of these colonies, and such is now the necessity which constrains them to alter their former systems of government. The history of the present king of Great Britain is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute tyranny over these States. To prove this, let facts be submitted to a candid world:

He has refused his assent to laws the most wholesome and necessary for the public good.

He has forbidden his governors to pass laws of immediate and pressing importance, unless suspended in their operation till his assent should be obtained; and when so suspended, he has utterly neglected to attend to them. He has refused to pass other laws for the accommodation of large districts of people, unless those people would relinquish the right of representation in the legislature—a right inestimable to them, and formidable to tyrants only.

He has called together legislative bodies at places unusual, uncomfortable, and distant from the repository of the public records, for the sole purpose of fatiguing them into compliance with his measures.

He has dissolved representative houses repeatedly for opposing, with manly firmness, his invasions on the rights of the people.

He has refused for a long time after such dissolution to cause others to be elected; whereby the legislative powers, incapable of annihilation, have returned to the people at large for their exercise, the State remaining, in the mean time, exposed to all the dangers of invasion from without and convulsions within.

He has endeavored to prevent the population of these States; for that purpose obstructing the laws of naturalization of foreigners; refusing to pass others to encourage their migration hither, and raising the conditions of new appropriations of lands.

He has obstructed the administration of justice by refusing his assent to laws for establishing judiciary powers.

He has made judges dependent on his will alone for the tenure of their offices and the amount and payment of their salaries.

He has erected a multitude of new offices, and sent hither swarms of officers to harass our people, and eat out their substance.

He has kept among us, in times of peace, standing armies, without the consent of our legislatures.

He has affected to render the military independent of and superior to the civil power.

He has combined with others to subject us to a jurisdiction foreign to our Constitution, and unacknowledged by our laws; giving his assent to their acts of pretended legislation:

For quartering large bodies of armed troops among us:

For protecting them by a mock trial from punishment for any murders which they should commit on the inhabitants of these States:

For cutting off our trade with all parts of the world:

For imposing taxes on us without our consent:

For depriving us, in many cases, of the benefits of trial by jury:

For transporting us beyond seas to be tried for pretended offences:

For abolishing the free system of English laws in a neighboring province, establishing therein an arbitrary government, and enlarging its boundaries, so as to render it at once an example and fit instrument for introducing the same absolute rule into these colonies:

For taking away our charters, abolishing our most valuable laws, and altering, fundamentally, the forms of our government:

For suspending our own legislatures, and declaring themselves invested with power to legislate for us in all cases whatsoever.

He has abdicated government here by declaring us out of his protection, and waging war against us.

He has plundered our seas, ravaged our coasts, burnt our towns, and destroyed the lives of our people.

He is at this time transporting large armies of foreign mercenaries to complete the works of death, desolation, and tyranny already begun, with circumstances of cruelty and perfidy scarcely paralleled in the most barbarous ages, and totally unworthy the head of a civilized nation.

He has constrained our fellow-citizens, taken captive on the high seas, to bear arms against their country, to become the executioners of their friends and brethren, or to fall themselves by their hands.

He has excited domestic insurrections among us, and has endeavored to bring on the inhabitants of our frontiers the merciless Indian savages, whose known rule of warfare is an undistinguished destruction of all ages, sexes, and conditions.

In every stage of these oppressions we have petitioned for redress in the most humble terms; our repeated petitions have been answered only by repeated injury. A prince whose character is thus marked by every act which may define a tyrant is unfit to be the ruler of a free people.

Nor have we been wanting in attentions to our British brethren. We have warned them, from time to time, of attempts by their legislature to extend an unwarrantable jurisdiction over us. We have reminded them of the circumstances of our emigration and settlement here. We have appealed to their native justice and magnanimity, and we have conjured them by the ties of our common kindred to disavow these usurpations, which would inevitably interrupt our connections and correspondence. They, too, have been deaf to the voice of justice and consanguinity. We must, therefore, acquiesce in the necessity which denounces our separation, and hold them, as we hold the rest of mankind, enemies in war, in peace friends.

We, therefore, the representatives of the United States of America, in General Congress assembled, appealing to the Supreme Judge of the world for the rectitude of our intentions, do, in the name and by the authority of the good people of these colonies, solemnly publish and declare, that these United Colonies are, and of right ought to be, free and independent States; that they are absolved from all allegiance to the British crown, and that all political connection between them and the State of Great Britain is, and ought to be, totally dissolved; and that, as free and independent States, they have full power to levy war, conclude peace, contract alliances, establish commerce, and to do all other acts and things which independent States may of right do. And for the support of this declaration, with a firm reliance on the protection of Divine Providence, we mutually pledge to each other our lives, our fortunes, and our sacred honor.

## SIGNERS OF THE DECLARATION OF INDEPENDENCE.

| NAMES AND PLACE OF BIRTH. | DIED. | AGE. | NAMES AND PLACE OF BIRTH. | DIED. | AGE. |
|---|---|---|---|---|---|
| John Hancock, Mass | 1793 | 56 | Abraham Clarke, N. J | 1794 | 68 |
| Josiah Bartlett, Mass | 1795 | 65 | Robert Morris, England | 1806 | 73 |
| William Whipple, Me | 1785 | 55 | Benjamin Rush, Pa | 1813 | 68 |
| Matthew Thornton, Ireland | 1803 | 89 | Benjamin Franklin, Mass | 1790 | 84 |
| Samuel Adams, Mass | 1803 | 81 | John Morton, Pa | 1777 | 53 |
| John Adams, Mass | 1826 | 91 | George Clymer, Pa | 1813 | 74 |
| Robert Treat Paine, Mass | 1814 | 83 | James Smith, Ireland | 1806 | 86 |
| Elbridge Gerry, Mass | 1814 | 70 | George Taylor, Ireland | 1781 | 65 |
| Stephen Hopkins, R. I | 1785 | 78 | James Wilson, Scotland | 1798 | 56 |
| William Ellery, R. I | 1820 | 93 | George Ross, Del | 1780 | 50 |
| Roger Sherman, Mass | 1793 | 72 | Cæsar Rodney, Del | 1783 | 53 |
| Samuel Huntington, Conn | 1796 | 64 | George Reed, Md | 1798 | 64 |
| William Williams, Conn | 1811 | 80 | Thomas McKean, Pa | 1817 | 83 |
| Oliver Wolcott, Conn | 1797 | 71 | Samuel Chase, Md | 1811 | 70 |
| William Floyd, N. Y | 1821 | 87 | William Paca, Md | 1799 | 59 |
| Philip Livingston, N. Y | 1776 | 62 | Thomas Stone, Md | 1787 | 44 |
| Francis Lewis, England | 1803 | 90 | Charles Carroll, Md | 1832 | 95 |
| Lewis Morris, N. Y | 1798 | 72 | George Wythe, Va | 1800 | 74 |
| Richard Stockton, N. J | 1781 | 51 | Richard H. Lee, Va | 1794 | 62 |
| John Witherspoon, Scotland | 1794 | 72 | Thomas Jefferson, Va | 1826 | 83 |
| Francis Hopkinson, Pa | 1791 | 54 | Benjamin Harrison, Va | 1797 | 55 |
| John Hart, N. J | 1780 | 66 | Thomas Nelson, Va | 1789 | 51 |
| Francis L. Lee, Va | 1797 | 63 | Thomas Heyward, jr., S. C | 1809 | 63 |
| Carter Braxton, Va | 1797 | 61 | Thomas Lynch, S. C | 1777 | 30 |
| William Hooper, Mass | 1790 | 48 | Arthur Middleton, S. C | 1788 | 45 |
| Joseph Hewes, N. J | 1779 | 49 | Button Gwinnet, England | 1777 | 45 |
| John Penn, Va | 1788 | 47 | Lyman Hall, Conn | 1784 | 63 |
| Edward Rutledge, S. C | 1800 | 51 | George Walton, Va | 1804 | 64 |

## PRESIDENTS OF THE CONTINENTAL CONGRESS.

Peyton Randolph, Virginia....1774
Henry Middleton, S. Carolina...1774
Peyton Randolph, Virginia....1775
John Hancock, Massachusetts..1776
Henry Laurens, S. Carolina....1777
John Jay, New York....1778
Samuel Huntington, Conn....1779
John Hanson, Maryland....1781
Elias Boudinot, New Jersey....1782
Thomas Mifflin, Pennsylvania..1783
Richard Henry Lee, Virginia...1784
Nathaniel Gorham, Mass....1786
Arthur St. Clair, Pennsylvania.1787
Cyrus Griffin, Virginia....1788
Thomas McKean, Delaware....1781

## ADOPTION OF THE CONSTITUTION.

The Articles of Confederation were adopted November 15, 1777, and were ratified by all the States March 1, 1781. A form of Constitution was agreed upon September 17, 1787, which was adopted March 4, 1789.

# CONSTITUTION OF THE UNITED STATES.

## PREAMBLE.

WE, the People of the United States, in order to form a more perfect union, establish justice, insure domestic tranquillity, provide for the common defence, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America.

## ARTICLE I.

### THE LEGISLATIVE DEPARTMENT.

SECTION I.—All legislative powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

SECTION II.—1. The House of Representatives shall be composed of members chosen every second year by the people of the several States; and the electors in each State shall have the qualifications requisite for electors of the most numerous branch of the State legislature.

2. No person shall be a representative who shall not have attained to the age of twenty-five years, and been seven years a citizen of the United States, and who shall not, when elected, be an inhabitant of that State in which he shall be chosen.

3. Representatives and direct taxes shall be apportioned among the several States which may be included within this Union, according to their respective numbers, which shall be determined by adding to the whole number of free persons, including those bound to service for a term of years, and excluding Indians not taxed, three fifths of all other persons. The actual enumeration shall be made within three years after the first meeting of the Congress of the United States, and within every subsequent term of ten years, in such manner as they shall by law direct. The number of representatives shall not exceed one for every thirty thousand, but each State shall have at least one representative; and until such enumeration shall be made, the State of New Hampshire shall be entitled to choose three; Massachusetts, eight; Rhode Island and Providence Plantations, one; Connecticut, five; New York, six; New Jersey, four; Pennsylvania, eight; Delaware, one; Maryland, six; Virginia, ten; North Carolina, five; South Carolina, five; and Georgia, three.

4. When vacancies happen in the representation from any State, the executive authority thereof shall issue writs of election to fill such vacancies.

5. The House of Representatives shall choose their Speaker and other officers, and shall have the sole power of impeachment.

SECTION III.—1. The Senate of the United States shall be composed of two Senators from each State, chosen by the legislature thereof for six years; and each Senator shall have one vote.

2. Immediately after they shall be assembled in consequence of the first election, they shall be divided as equally as may be into three classes. The seats of the Senators of the first class shall be vacated at the expiration of the second year, of the second class at the expiration of the fourth year, and of the third class at the expiration of the sixth year, so that one third may be chosen every second year; and if vacancies happen, by resignation or otherwise, during the recess of the legislature of any State, the executive thereof may make temporary appointments until the next meeting of the legislature, which shall then fill such vacancies.

3. No person shall be a Senator who shall not have attained to the age of thirty years, and been nine years a citizen of the United States, and who shall not, when elected, be an inhabitant of that State for which he shall be chosen.

4. The Vice-President of the United States shall be President of the Senate, but shall have no vote unless they be equally divided.

5. The Senate shall choose their other officers, and also a President *pro tempore* in the absence of the Vice-President, or when he shall exercise the office of President of the United States.

6. The Senate shall have the sole power to try all impeachments. When sitting for that purpose, they shall be on oath or affirmation. When the President of the United States is tried, the Chief Justice shall preside: and no person shall be convicted without the concurrence of two thirds of the members present.

7. Judgment in cases of impeachment shall not extend further than to removal from office, and disqualification to hold and enjoy any office of honor, trust, or profit under the United States; but the party convicted shall nevertheless be liable and subject to indictment, trial, judgment, and punishment, according to law.

SECTION IV.—1. The times, places, and manner of holding elections for Senators and Representatives shall be prescribed in each State by the legislature thereof; but the Congress may at any time, by law, make or alter such regulations, except as to the places of choosing Senators.

2. The Congress shall assemble at least once in every year; and such meeting shall be on the first Monday in December, unless they shall by law appoint a different day.

SECTION V.—1. Each house shall be the judge of the elections, returns, and qualifications of its own members, and a majority of each shall constitute a quorum to do business; but a smaller number may adjourn from day to day, and may be authorized to compel the attendance of absent members, in such manner and under such penalties as each house may provide.

2. Each house may determine the rules of its proceedings, punish its members for disorderly behavior, and with the concurrence of two thirds, expel a member.

3. Each house shall keep a journal of its proceedings, and from time to time publish the same, excepting such parts as may in their judgment require secrecy; and the yeas and nays of the members of either house on any question shall, at the desire of one fifth of those present, be entered on the journal.

4. Neither house, during the session of Congress, shall, without the consent of the other, adjourn for more than three days, nor to any other place than that in which the two houses shall be sitting.

SECTION VI.—1. The Senators and Representatives shall receive a compensation for their services, to be ascertained by law, and paid out of the treasury of the United States. They shall, in all cases, except treason, felony, and breach of the peace, be privileged from arrest during their attendance at the session of their respective houses, and in going to and returning from the same; and for any speech or debate in either house they shall not be questioned in any other place.

2. No Senator or Representative shall, during the time for which he was elected, be appointed to any civil office under the authority of the United States, which shall have been created, or the emoluments whereof shall have been increased, during such time; and no person holding any office under the United States shall be a member of either house during his continuance in office.

SECTION VII.—1. All bills for raising revenue shall originate in the House of Representatives; but the Senate may propose or concur with amendments, as on other bills.

2. Every bill which shall have passed the House of Representatives and the Senate, shall, before it become a law, be presented to the President of the United States; if he approve, he shall sign it; but if not, he shall return it, with his objections, to that house in which it shall have originated; who shall enter the objections at large on their journal, and proceed to reconsider it. If, after such reconsideration, two thirds of that house shall agree to pass the bill, it shall be sent, together with the objections, to the other house, by which it shall likewise be reconsidered; and if approved by two thirds of that house, it shall become a law. But in all such cases the votes of both houses shall be determined by yeas and nays, and the names of the persons voting for and against the bill shall be entered on the journal of each house respectively. If any bill shall not be returned by the President within ten days (Sundays excepted) after it shall have been presented to

him, the same shall be a law in like manner as if he had signed it, unless the Congress by their adjournment prevent its return, in which case it shall not be a law.

3. Every order, resolution, or vote, to which the concurrence of the Senate and House of Representatives may be necessary (except on a question of adjournment), shall be presented to the President of the United States; and before the same shall take effect, shall be approved by him; or being disapproved by him, shall be repassed by two thirds of the Senate and House of Representatives, according to the rules and limitations prescribed in the case of a bill.

SECTION VIII.—The Congress shall have power—

1. To lay and collect taxes, duties, imposts, and excises; to pay the debts, and provide for the common defence and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States:

2. To borrow money on the credit of the United States:

3. To regulate commerce with foreign nations, and among the several States, and with the Indian tribes:

4. To establish a uniform rule of naturalization, and uniform laws on the subject of bankruptcies throughout the United States:

5. To coin money, regulate the value thereof and of foreign coin, and to fix the standard of weights and measures:

6. To provide for the punishment of counterfeiting the securities and current coin of the United States:

7. To establish post-offices and post-roads:

8. To promote the progress of science and useful arts, by securing for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries:

9. To constitute tribunals inferior to the Supreme Court:

10. To define and punish piracies and felonies committed on the high seas, and offences against the law of nations:

11. To declare war, grant letters of marque and reprisal, and make rules concerning captures on land and water:

12. To raise and support armies; but no appropriation of money to that use shall be for a longer term than two years:

13. To provide and maintain a navy:

14. To make rules for the government and regulation of the land and naval forces:

15. To provide for calling forth the militia to execute the laws of the Union, suppress insurrections, and repel invasions:

16. To provide for organizing, arming, and disciplining the militia, and for governing such parts of them as may be employed in the service of the United States; reserving to the States respectively the appointment of the officers and the authority of training the militia according to the discipline prescribed by Congress:

17. To exercise exclusive legislation in all cases whatsoever, over such district (not exceeding ten miles square) as may, by cession of particular States, and the acceptance of Congress, become the seat of government of the United States; and to exercise like authority over all places purchased, by the consent of the legislature of the State in which the same shall be, for the erection of forts, magazines, arsenals, dockyards, and other needful buildings:—and

18. To make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this Constitution in the government of the United States, or in any department or officer thereof.

SECTION IX.—1. The immigration or importation of such persons as any of the States now existing shall think proper to admit, shall not be prohibited by the Congress prior to the year one thousand eight hundred and eight; but a tax or duty may be imposed on such importation not exceeding ten dollars for each person.

2. The privilege of the writ of habeas corpus shall not be suspended, unless when, in cases of rebellion or invasion, the public safety may require it.

3. No bill of attainder or *ex post facto* law shall be passed.

4. No capitation or other direct tax shall be laid, unless in proportion to the census or enumeration hereinbefore directed to be taken.

5. No tax or duty shall be laid on articles exported from any State. No preference shall be given by any regulation of commerce or revenue to the ports of one State over those of another: nor shall vessels bound to or from one State be obliged to enter, clear, or pay duties in another.

6. No money shall be drawn from the treasury, but in consequence of appropriations made by law; and a regular statement and account of the receipts and expenditures of all public money shall be published from time to time.

7. No title of nobility shall be granted by the United States: and no person holding any office of profit or trust under them, shall, without the consent of Congress, accept of any present, emolument, office, or title, of any kind whatever, from any king, prince, or foreign state.

SECTION X.—1. No State shall enter into any treaty, alliance, or confederation; grant letters of marque and reprisal; coin money; emit bills of credit; make anything but gold and silver coin a tender in payment of debts; pass any bill of attainder, *ex post facto* law, or law impairing the obligation of contracts; or grant any title of nobility.

2. No State shall, without the consent of Congress, lay any imposts or duties on imports or exports, except what may be absolutely necessary for executing its inspection laws: and the net produce of all duties and imposts laid by any State on imports or exports, shall be for the use of the treasury of the United States, and all such laws shall be subject to the revision and control of Congress.

3. No State shall, without the consent of Congress, lay any duty on tonnage, keep troops or ships of war in time of peace, enter into any agreement or compact with another State, or with a foreign power, or engage in war, unless actually invaded, or in such imminent danger as will not admit of delay.

## ARTICLE II.

### THE EXECUTIVE DEPARTMENT.

SECTION I.—1. The executive power shall be vested in a President of the United States of America. He shall hold his office during the term of four years; and, together with the Vice-President, chosen for the same term, be elected as follows:

2. Each State shall appoint, in such manner as the legislature thereof may direct, a number of electors equal to the whole number of Senators and Representatives to which the State may be entitled in Congress: but no Senator or Representative, or person holding an office of trust or profit under the United States, shall be appointed an elector.

3. The electors shall meet in their respective States, and vote by ballot for two persons, of whom one at least shall not be an inhabitant of the same State with themselves. And they shall make a list of all the persons voted for, and of the number of votes for each; which list they shall sign and certify, and transmit sealed to the seat of the government of the United States, directed to the President of the Senate. The President of the Senate shall, in the presence of the Senate and House of Representatives, open all the certificates, and the votes shall then be counted. The person having the greatest number of votes shall be President, if such number be a majority of the whole number of electors appointed; and if there be more than one who have such a majority, and have an equal number of votes, then the House of Representatives shall immediately choose, by ballot, one of them for President; and if no person have a majority, then, from the five highest on the list, the said House shall, in like manner, choose a President. But in choosing the President, the votes shall be taken by States, the representation from each State having one vote: a quorum for this purpose shall consist of a member or members from two thirds of the States, and a majority of all the States shall be necessary to a choice. In every case,

after the choice of the President, the person having the greatest number of votes of the electors shall be Vice-President. But if there should remain two or more who have equal votes, the Senate shall choose from them, by ballot, the Vice-President.

4. The Congress may determine the time of choosing the electors, and the day on which they shall give their votes, which day shall be the same throughout the United States.

5. No person except a natural born citizen, or a citizen of the United States at the time of the adoption of this Constitution, shall be eligible to the office of President: neither shall any person be eligible to that office who shall not have attained to the age of thirty-five years, and been fourteen years a resident within the United States.

6. In case of the removal of the President from office, or of his death, resignation, or inability to discharge the powers and duties of the said office, the same shall devolve on the Vice-President; and the Congress may, by law, provide for the case of removal, death, resignation, or inability, both of the President and Vice-President, declaring what officer shall then act as President; and such officer shall act accordingly, until the disability be removed, or a President shall be elected.

7. The President shall, at stated times, receive for his services a compensation, which shall neither be increased nor diminished during the period for which he shall have been elected; and he shall not receive within that period any other emolument from the United States, or any of them.

8. Before he enters on the execution of his office, he shall take the following oath or affirmation:

"I do solemnly swear (or affirm) that I will faithfully execute the office of President of the United States: and will, to the best of my ability, preserve, protect, and defend the Constitution of the United States."

SECTION II.—1. The President shall be Commander-in-Chief of the army and navy of the United States, and of the militia of the several States, when called into the actual service of the United States. He may require the opinion, in writing, of the principal officer in each of the executive departments, upon any subject relating to the duties of their respective offices; and he shall have power to grant reprieves and pardons for offences against the United States, except in cases of impeachment.

2. He shall have power, by and with the advice and consent of the Senate, to make treaties, provided two thirds of the Senators present concur; and he shall nominate, and, by and with the advice and consent of the Senate, shall appoint ambassadors and other public ministers and consuls, judges of the Supreme Court, and all other officers of the United States whose appointments are not herein otherwise provided for, and which shall be established by law. But the Congress may, by law, vest the appointment of such inferior officers as they think proper, in the President alone, in the courts of law, or in the heads of departments.

3. The President shall have power to fill up all vacancies that may happen during the recess of the Senate, by granting commissions, which shall expire at the end of their next session.

SECTION III.—He shall, from time to time, give to Congress information of the state of the Union, and recommend to their consideration such measures as he shall judge necessary and expedient. He may, on extraordinary occasions, convene both houses, or either of them; and in case of disagreement between them, with respect to the time of adjournment, he may adjourn them to such time as he shall think proper. He shall receive ambassadors and other public ministers. He shall take care that the laws be faithfully executed; and shall commission all officers of the United States.

SECTION IV.—The President, Vice-President, and all civil officers of the United States, shall be removed from office on impeachment for, and conviction of, treason, bribery, or other high crimes and misdemeanors.

## ARTICLE III.

### THE JUDICIAL DEPARTMENT.

SECTION I.—The judicial power of the United States shall be vested in one Supreme Court, and in such inferior courts as Congress may, from time

to time, ordain and establish. The judges, both of the supreme and inferior courts, shall hold their offices during good behavior; and shall, at stated times, receive for their services a compensation, which shall not be diminished during their continuance in office.

SECTION II.—1. The judicial power shall extend to all cases in law and equity arising under this Constitution, the laws of the United States, and treaties made, or which shall be made, under their authority; to all cases affecting ambassadors, other public ministers, and consuls; to all cases of admiralty and maritime jurisdiction; to controversies to which the United States shall be a party; to controversies between two or more States; between a State and citizens of another State; between citizens of different States; between citizens of the same State claiming lands under grants of different States; and between a State, or the citizens thereof, and foreign states, citizens, or subjects.

2. In all cases affecting ambassadors, other public ministers, and consuls, and those in which a State shall be a party, the Supreme Court shall have original jurisdiction. In all the other cases before mentioned, the Supreme Court shall have appellate jurisdiction, both as to law and fact, with such exceptions and under such regulations as Congress shall make.

3. The trial of all crimes, except in cases of impeachment, shall be by jury, and such trial shall be held in the State where the said crimes shall have been committed; but when not committed within any State, the trial shall be at such place or places as Congress may by law have directed.

SECTION III.—1. Treason against the United States shall consist only in levying war against them, or in adhering to their enemies, giving them aid and comfort. No person shall be convicted of treason, unless on the testimony of two witnesses to the same overt act, or on confession in open court.

2. Congress shall have power to declare the punishment of treason; but no attainder of treason shall work corruption of blood, or forfeiture, except during the life of the person attainted.

## ARTICLE IV.

### MISCELLANEOUS PROVISIONS.

SECTION I.—Full faith and credit shall be given in each State to the public acts, records, and judicial proceedings of every other State; and Congress may, by general laws, prescribe the manner in which such acts, records, and proceedings shall be proved, and the effect thereof.

SECTION II.—1. The citizens of each State shall be entitled to all the privileges and immunities of citizens in the several States.

2. A person charged in any State with treason, felony, or other crime, who shall flee from justice, and be found in another State, shall, on demand of the executive authority of the State from which he fled, be delivered up, to be removed to the State having jurisdiction of the crime.

3. No person held to service or labor in one State, under the laws thereof, escaping into another, shall, in consequence of any law or regulation therein, be discharged from such service or labor; but shall be delivered up on claim of the party to whom such service or labor may be due.

SECTION III.—1. New States may be admitted by Congress into this Union; but no new State shall be formed or erected within the jurisdiction of any other State, nor any State be formed by the junction of two or more States, or parts of States, without the consent of the legislatures of the States concerned, as well as of Congress.

2. Congress shall have power to dispose of, and make all needful rules and regulations respecting the territory or other property belonging to the United States; and nothing in this Constitution shall be so construed as to prejudice any claims of the United States, or of any particular State.

SECTION IV.—The United States shall guarantee to every State in this Union a republican form of government, and shall protect each of them against invasion: and, on application of the legislature, or of the executive (when the legislature can not be convened), against domestic violence.

## ARTICLE V.

The Congress, whenever two thirds of both houses shall deem it necessary, shall propose amendments to this Constitution; or, on the application

of the legislatures of two thirds of the several States, shall call a convention for proposing amendments, which, in either case, shall be valid, to all intents and purposes, as parts of this Constitution, when ratified by the legislatures of three fourths of the several States, or by conventions in three fourths thereof, as the one or the other mode of ratification may be proposed by Congress; provided that no amendment which may be made prior to the year one thousand eight hundred and eight shall in any manner affect the first and fourth clauses in the ninth section of the first article; and that no State, without its consent, shall be deprived of its equal suffrage in the Senate.

ARTICLE VI.

1. All debts contracted, and engagements entered into, before the adoption of this Constitution, shall be as valid against the United States under this Constitution as under the Confederation.

2. This Constitution, and the laws of the United States which shall be made in pursuance thereof, and all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land; and the judges in every State shall be bound thereby, anything in the constitution or laws of any State to the contrary notwithstanding.

3. The Senators and Representatives before mentioned, and the members of the several State legislatures, and all executive and judicial officers, both of the United States and of the several States, shall be bound by oath or affirmation to support this Constitution; but no religious test shall ever be required as a qualification to any office or public trust under the United States.

ARTICLE VII.

The ratification of the conventions of nine States shall be sufficient for the establishment of this Constitution between the States so ratifying the same.

Done in convention by the unanimous consent of the States present, the seventeenth day of September, in the year of our Lord one thousand seven hundred and eighty-seven, and of the Independence of the United States of America the twelfth. In witness whereof we have hereunto subscribed our names.

GEORGE WASHINGTON,
*President, and Deputy from Virginia.*

## Amendments to the Constitution of the United States.

ARTICLE I.—Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech or of the press; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances.

ARTICLE II.—A well-regulated militia being necessary to the security of a free State, the right of the people to keep and bear arms shall not be infringed.

ARTICLE III.—No soldier shall, in time of peace, be quartered in any house without the consent of the owner; nor in time of war, but in a manner to be prescribed by law.

ARTICLE IV.—The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated; and no warrants shall issue but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

ARTICLE V.—No person shall be held to answer for a capital or otherwise infamous crime, unless on a presentment or indictment of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service in time of war or public danger; nor shall any person be subject for the same offence to be put twice in jeopardy of life or limb; nor shall be compelled in any criminal case to be witness against himself; nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use without just compensation.

ARTICLE VI.—In all criminal prosecutions the accused shall enjoy the

right to a speedy and public trial, by an impartial jury of the State and district wherein the crime shall have been committed, which district shall have been previously ascertained by law; and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor; and to have the assistance of counsel for his defence.

ARTICLE VII.—In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved; and no fact tried by a jury shall be otherwise re-examined in any court of the United States, than according to the rules of the common law.

ARTICLE VIII.—Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.

ARTICLE IX.—The enumeration in the Constitution of certain rights shall not be construed to deny or disparage others retained by the people.

ARTICLE X.—The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.

ARTICLE XI.—The judicial power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted against one of the United States by citizens of another State, or by citizens or subjects of any foreign state.

ARTICLE XII.—1. The electors shall meet in their respective States, and vote by ballot for President and Vice-President, one of whom, at least, shall not be an inhabitant of the same State with themselves. They shall name in their ballots the person voted for as President, and in distinct ballots the person voted for as Vice-President; and they shall make distinct lists of all persons voted for as President, and of all persons voted for as Vice-President, and of the number of votes for each; which lists they shall sign and certify, and transmit sealed to the seat of the government of the United States, directed to the President of the Senate. The President of the Senate shall, in the presence of the Senate and House of Representatives, open all the certificates, and the votes shall then be counted. The person having the greatest number of votes for President shall be the President, if such number be a majority of the whole number of electors appointed: and if no person have such majority, then from the persons having the highest numbers, not exceeding three, on the list of those voted for as President, the House of Representatives shall choose immediately, by ballot, the President. But, in choosing the President, the votes shall be taken by States, the representation from each State having one vote: a quorum for this purpose shall consist of a member or members from two thirds of the States, and a majority of all the States shall be necessary to a choice. And if the House of Representatives shall not choose a President, whenever the right of choice shall devolve upon them, before the fourth day of March next following, then the Vice-President shall act as President, as in the case of the death or other constitutional disability of the President.

2. The person having the greatest number of votes as Vice-President shall be the Vice-President, if such number be a majority of the whole number of electors appointed; and if no person have a majority, then from the two highest numbers on the list the Senate shall choose the Vice-President. A quorum for the purpose shall consist of two thirds of the whole number of Senators, and a majority of the whole number shall be necessary to a choice.

3. But no person constitutionally ineligible to the office of President shall be eligible to that of Vice-President of the United States.

ARTICLE XIII.—SECTION I.—Neither slavery nor involuntary servitude, except as a punishment for crime, whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.

SECTION II.—Congress shall have power to enforce this article by appropriate legislation.

ARTICLE XIV.—SECTION I.—All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United

States, and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.

SECTION II.—Representatives shall be apportioned among the several States according to their respective numbers, counting the whole number of persons in each State, excluding Indians not taxed. But when the right to vote at any election for the choice of electors for President and Vice-President of the United States, Representatives in Congress, the executive and judicial officers of a State, or the members of the legislature thereof, is denied to any of the male inhabitants of such State, being twenty-one years of age, and citizens of the United States, or in any way abridged, except for participation in rebellion or other crime, the basis of representation therein shall be reduced in the proportion which the number of such male citizens shall bear to the whole number of male citizens twenty-one years of age in such State.

SECTION III.—No person shall be a Senator or Representative in Congress, or elector of President and Vice-President, or hold any office, civil or military, under the United States, or under any State, who, having previously taken an oath as a member of Congress, or as an officer of the United States, or as a member of any State legislature, or as an executive or judicial officer of any State, to support the Constitution of the United States, shall have engaged in insurrection or rebellion against the same, or given aid or comfort to the enemies thereof. But Congress may, by a vote of two thirds of each house, remove such disability.

SECTION IV.—The validity of the public debt of the United States, authorized by law, including debts incurred for payment of pensions and bounties for services in suppressing insurrection or rebellion, shall not be questioned. But neither the United States nor any State shall assume or pay any debt or obligation incurred in aid of insurrection or rebellion against the United States, or any claim for the loss or emancipation of any slave; but all such debts, obligations, and claims shall be held illegal and void.

SECTION V.—The Congress shall have power to enforce, by appropriate legislation, the provisions of this Article.

ARTICLE XV.—SECTION I.—The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of race, color, or previous condition of servitude.

SECTION II.—The Congress shall have power to enforce this Article by appropriate legislation.

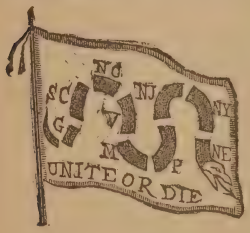
---

## HISTORY OF THE UNITED STATES FLAG.

THE idea of Standards originated with the Egyptians, at an early age. The Crusaders added the cross to their banners. The union of the three crosses of St. George, St. Andrew, and St. Patrick, marks, first the union of England and Scotland, into the Kingdom of Great Britain; and then, this Kingdom with Ireland. This is termed the Great Union Flag of Great Britain, and was brought by the colonists to America. When the thirteen colonies began to feel the pressure of British rule, they placed upon their banners a rattlesnake, cut in thirteen pieces, representing the thirteen colonies, with the motto, "*Join, or die.*" When these colonies became more united in their purposes of resistance to British tyranny, they placed upon their flag a well-formed rattlesnake, in the attitude of about to strike, with the motto, "*Don't tread on me.*"

Dr. Franklin, seeing this emblem on one of the drums of that day, writes as follows: "On inquiry, and from study, I learned that the ancients considered the serpent an emblem of wisdom; and, in some attitudes, of endless duration. Also, that countries are often represented by animals peculiar to that country. The rattlesnake is found nowhere but in America. Her

eye is exceedingly bright, and without eyelids,—emblem of vigilance. She never begins an attack, and she never surrenders,—emblem of magnanimity and courage. She never wounds even her enemies, till she generously gives them warning not to tread on her,—which is emblematical of the spirit of the people who inhabit her country. She appears apparently weak and defenceless, but her weapons are nevertheless formidable. Her poison is the necessary means for the digestion of her food, but certain destruction to her enemies,—showing the power of American resources. Her thirteen rattles, the only part which increases in number, are distinct from each other, and yet so united that they can not be disconnected without breaking them to pieces,—showing the impossibility of an American Republic without a Union of States. A single rattle will give no sound alone, but the ringing of the thirteen together is sufficient to startle the boldest man alive. She is beautiful in youth, which increaseth with her age. Her tongue is forked, as the lightning; and her abode is among the impenetrable rocks."



The next form of the United States Flag was the Stars and Stripes. Its proportions are perfect, when properly made,—the first and last stripe being red, with alternate stripes of white. The blue field, for the stars, is the square of the width of seven stripes.

On the 14th of June, 1777, the Continental Congress resolved, "that the flag of the United States be thirteen stripes, alternate red and white, and that the Union be thirteen white stars on a blue field, representing a new Constellation." Previous to this, our national banner was the Union flag, combining the crosses of St. George and St. Andrew.

The Stars and Stripes were unfurled, for the first time, at the battle of Saratoga, on the occasion of the surrender of General Burgoyne.

The Stars of the flag represent the idea taken from the Constellation Lyra, which signifies harmony. The blue of the field was taken from the banner of the Covenanters of Scotland, likewise significant of the league and covenant of the United Colonies against oppression, and incidentally involving vigilance, perseverance, and justice. The stars were disposed in a circle, symbolizing the perpetuity of the Union, the circle being the sign of eternity. Both the thirteen stripes and the stars showed the number of the United Colonies, and denoted the subordination of the States to, and their dependence upon, the Union, as well as equality among themselves. The whole was a blending of the previous banners, namely, the red flag of the army and white one of the navy. The red color, which in the days of Roman glory was the signal of defiance, denoted daring, and the white purity.

On the 13th of January, 1794, by an act of Congress, the flag was altered to fifteen red and white stripes, and fifteen stars. On the 4th of April, 1818, Congress again altered the flag by returning to the original thirteen stripes and fifteen stars, as the adding of a new stripe for each additional State would soon make the flag too unwieldy. The new star is added to the flag on the 4th of July following the admission of each State into the Union.

## THE NAVY OF THE REVOLUTION.

In December, 1775, Congress passed an Act ordering the building of thirteen vessels, three of 24 guns, five of 28, and five of 32, with Ezekiel Hopkins as Commander-in-Chief, as follows:

| NAME. | NO. OF GUNS. | HISTORY. |
|---|---|---|
| Hancock..... | 32 | Captured by the British in 1777. |
| Congress ..... | 28 | Destroyed in the Hudson River to avoid capture in 1777, never having been to sea. |
| Montgomery .. | 28 | Do., do., do. |
| Delaware ..... | 24 | Captured in the Delaware River, 1777. |
| Randolph ..... | 32 | Blown up in action with the British ship Yarmouth, 64 guns, in 1778. |
| Washington.... | 32 | Destroyed in the Delaware by the British, before getting to sea, in 1778. |
| Effingham..... | 28 | Do., do., do. |
| Raleigh ..... | 32 | Captured by the British in 1778. |
| Virginia ..... | 28 | Captured by the British in 1778, off the capes of the Delaware, before getting to sea. |
| Warren ..... | 32 | Burned in the Penobscot River in 1779, to prevent falling into the enemy's hands. |
| Providence .... | 28 | Seized by the British at the capture of Charleston, S. C., in 1780. |
| Boston ..... | 24 | Do., do., do. |
| Trumbull..... | 28 | Captured by the British ship Watt, in 1781. |

Such is the story in brief of the "original thirteen" vessels. Not one survived in the possession of the Colonies to the close of the war. About ten vessels of a force ranging from 24 guns down to 10, and two even smaller, were purchased and fitted out as cruisers, while the "thirteen" were building.

The navy of the Revolution was disbanded at the close of the war; the officers gave up their commissions; the few public vessels that remained were sold. Several of the States maintained small cruisers, with the consent of Congress. During the last year or two of the war, it had dwindled almost to nothing. This was in part due to the fact that its place was taken by the French. The assertion of sovereignty on the seas was not yet thought of, while independence on the land was not secured.

The most remarkable naval engagement of the Revolution was fought off the coast of Scotland on the evening of September 23d, 1779, between the Bon Homme Richard, of 40 guns, commanded by Paul Jones, and the Serapis, a British frigate of 44 guns, under Capt. Pearson. The Serapis surrendered with a loss of 150. The Richard lost 300 in killed and wounded, and while sinking the crew was transferred to the Serapis.

# PRINCIPAL LAND BATTLES OF THE WAR OF 1812.

| Dates. Battles. | Commanders | | Men Engaged | | | |
|---|---|---|---|---|---|---|
| | American. | British. | American. | Loss. | British. | Loss. |
| 1812—Aug. 5..Brownstown, Canada.... | Van Horn..... | Tecumseh* .... | 200 | | 600 | |
| Aug. 9..Maguauga ..... | Miller* ..... | Tecumseh..... | 600 | | 900 | |
| Aug. 15. Detroit ..... | Hull ..... | Brock* ..... | 2,500 | Surrender. | 1,300 | |
| Oct. 13..Queenstown ..... | Van Rensselaer. | Brock*..... | 1,200 | 99 k., 900 w. | 2,500 | |
| Oct. 21..Ogdensburg ..... | Forsyth..... | ——* ..... | 1,200 | 20 k. and w. | 600 | 60 k. and w. |
| 1813—Jan. 22..Frenchtown..... | Winchester .... | Proctor* ..... | 800 | 260 k. and s. | 1,500 | |
| Apr. 27..York (Toronto)... ..... | Pike* ..... | Sheaffe..... | 1,700 | 300 k., w. and m. | 1,500 | |
| May 5..Fort Meigs..... .... | Clay* ..... | Proctor..... | 1,200 | 800 k., w. and p. | 2,000 | |
| May 27..Fort George, Canada .... | Dearborn* .... | Vincent..... | | 72 k. and w. | | |
| May 27..Fort Mimms..... | Beaseley ..... | Tecumseh* .... | | 300 k. | | |
| May 29..Sackett's Harbor..... | Brown* ..... | Prevost ..... | 1,000 | 100 k. and w. | 1,000 | 60 k. |
| June 8..Stoney Creek..... | Winder ..... | Vincent*..... | | 100 k., w. and p. | | 100 k., w. & p. |
| Aug. 2..Fort Stephenson ..... | Croghan* ..... | Proctor ..... | 100 | 1 k. and 7 w. | 1,300 | |
| Oct. 5..Thames, Canada ..... | Harrison* ..... | Proctor ..... | 2,500 | 50 k. and w. | 2,000 | |
| Nov. 11. Chrysler's Field..... | Boyd* ..... | Morrison..... | 1 500 | 200 k. and w. | 2,000 | |
| 1814—Mar. 30..La Coel Mill ..... | Wilkinson ..... | Hancock* ..... | 4,000 | 150 k. and w. | 2,000 | |
| Apr. 25..Washington..... | —— ..... | Ross*..... | Capital and buildings burned. | | | |
| July 5..Chippewa ..... ..... | Brown* ..... | Riall ..... | 1,900 | 68 k., 267 w. & p. | 2,100 | |
| July 25..Lundy's Lane..... | Brown*..... | Drummond .... | 3,500 | | 5,000 | |
| Aug. 15..Fort Erie (assault) ..... | Gaines*..... | Drummond .... | 2,500 | 84 k. | 5,000 | |
| Aug. 24. Bladensburg ..... | Winder. ..... | Ross*..... | 3,500 | Surrendered. | 5,000 | |
| Sep. 11. Plattsburg ..... | Macomb* ..... | Prevost ..... | 3,000 | | 12,000 | |
| Sep. 12..North Point..... .. | Stricker ..... | Brooke* ..... | 2,000 | | 5,000 | |
| Sep. 13..Fort McHenry, Baltimore | Armistead* .... | Cochrane ..... | 3'000 | | Ships. | |
| Sep. 15..Fort Bowyer ..... | Lawrence*..... | Nicholls ..... | 120 | 8 k. and w. | Mixed. | |
| Sep. 17..Fort Erie (sortie)..... | Brown*..... | Drummond .... | 2,500 | 300 k. and w | 3,500 | |
| Dec. 19..Fort Niagara ..... .. | Leonard ..... | Br. & Indians*. | 350 | 350 k. and p. | 1,200 | Slight. |
| Dec. 23..9 miles from New Orleans | Jackson..... | Keane ..... | 3,000 | 240 k., w. and p. | 2,500 | |
| 1815—Jan. 8..New Orleans ..... | Jackson* ..... | Pakenham ..... | 6,000 | 71 k,, w. and p. | 12,000 | |

The * denotes the successful army; k., killed; w., wounded; p., prisoners; m., missing; s., surrendered.

## PRINCIPAL NAVAL BATTLES OF THE WAR OF 1812.

| DATES. | WHERE FOUGHT. | AMERICAN VESSELS AND COMMANDERS. | BRITISH VESSELS AND COMMANDERS. |
|---|---|---|---|
| 1812—Aug. 13. | Off Newfoundland | Frigate Essex, Porter* | Sloop Alert, Laugharne. |
| Aug. 19. | Off Massachusetts | Frigate Constitution, Hull* | Frigate Guerriere, Dacres. |
| Oct. 18. | Off North Carolina | Sloop Wasp, Jones* | Frigate Frolic, Whinyates, |
| Oct. 25. | Near Canary Islands | Frigate United States, Decatur* | Frigate Macedonian, Carden. |
| Dec. 29. | Off San Salvador | Frigate Constitution, Bainbridge* | Frigate Java, Lambert. |
| 1813—Feb. 24. | Off Demerara | Sloop Hornet, Lawrence* | Brig Peacock, Peake. |
| June 1. | Massachusetts Bay | Frigate Chesapeake, Lawrence | Frigate Shannon, Broke.* |
| Aug. 14. | British Channel | Brig Argus, Allen | Sloop Pelican, Maples.* |
| Sept. 5. | Off coast of Maine | Brig. Enterprise, Burrows* | Brig Boxer, Blythe. |
| Sept. 10. | Lake Erie | 9 vessels, 54 guns, Perry* | 6 vessels, 63 guns, Barclay. |
| 1814—Mar. 28. | Harbor of Valparaiso | Frigate Essex, Porter | Brig Phœbe, Hillyar.*<br>Sloop Cherub, Tucker. |
| Apr. 29. | Off coast of Florida | Sloop Peacock, Warrington* | Brig Epervier, Wales. |
| June 28. | Near British Channel | Sloop Wasp, Blakely* | Sloop Reindeer, Manners. |
| Sept. 1. | Near Africa | Sloop Wasp, Blakely* | Sloop Avon, Arbuthnot. |
| Sept. 11. | Lake Champlain | 14 vessels, 86 guns, McDonough* | 17 vessels, 95 guns, Downie. |
| Sept. 15. | Mobile Bay | Fort Boyer, Major Lawrence*. | 4 ships, 90 guns, Col. Nichols. |
| Dec. 9. | Lake Borgue | 66 gun boats, Jones | 40 barges, Lockyer* |
| 1815—Jan. 15. | Off New Jersey | Frigate President, Decatur | Squadron, Hayes,* |
| Feb. 20. | Off Island of Madeira | Frigate Constitution, Stewart* | Ship Cyane, Falcon.<br>Ship Levant, Douglas. |
| Mar. 23. | Off Brazil | Sloop Hornet, Biddle* | Brig Penguin, Dickenson. |

The * denotes the victorious party.

## PRINCIPAL BATTLES OF THE MEXICAN WAR.

The Americans were victorious in every battle.

| Dates. | Battles. | Commanders | | Forces Engaged | | | |
|---|---|---|---|---|---|---|---|
| | | American. | Mexican. | American. | Loss. | Mexican | Loss. |
| 1846—May 8. | Palo Alto | Taylor | Arista | 2,300 | 4 k. and 40 w. | 6,000 | |
| May 9. | Resaca de la Palma | Taylor | Arista | 2,000 | 120 k. and w. | 5,000 | 500 k. and w. |
| Sep. 24. | Monterey | Taylor | Ampudia | 6,600 | 120 k. and 368 w. | 10,000 | |
| Dec. 25. | Bracite | Doniphan | Ponce de Leon | 500 | | 1,200 | |
| 1847—Feb. 23. | Buena Vista | Taylor | Santa Anna | 4,700 | 723 k. and w. | 17,000 | 2,000 k. and w. |
| Feb. 28. | Sacramento | Doniphan | Trias | 900 | | 4,000 | |
| Mar. 27. | Vera Cruz | Scott | Santa Anna | 12,000 | 19 k. and w. | 6,000 | 2,000 k. and w. |
| Apr. 18. | Cerro Gordo | Scott | Morleas | 8,500 | 500 k. and w. | 12,000 | 500 k. and w. |
| Aug. 11. | Puente Nagional | | | | | | |
| Aug. 20 | Contreras | Scott | Valencia | 4,000 | Slight. | 7,000 | 2,500 k. and w. |
| | Churubusco | Scott | Santa Anna | 8,000 | 700 k. and w. | 25,000 | 700 k. and w. |
| Sep. 8. | Moline del Rey | Worth | Alvarez | 3,500 | 787 k. and w. | 14,000 | 230 k. and w. |
| Sep. 13. | Chapultepec | Scott | Bravo | 7,200 | Slight. | 25,000 | Heavy. |
| Sep. 14. | Merico | Scott | Santa Anna | 6,000 | | | Surrender. |
| Oct. 9. | Huamantha | Lane | Santa Anna | 500 | 24 k. and w. | 1,000 | Unknown. |

The only naval engagements of importance during the war with Mexico was the bombardment of Vera Cruz, Commodore Connor, which lasted four days, and the city compelled to surrender; and the bombardment of Monterey by Commodore Sloat.

## Public Debt of the United States, From 1791 to 1883.

| | | | | | |
|---|---|---|---|---|---|
| 1791 | $75,463,476 52 | 1824 | $90,269,777 77 | 1857 | $ 28,699,831 85 |
| 1792 | 77,227,924 66 | 1825 | 83,788,432 71 | 1858 | 44,911 881 03 |
| 1793 | 80,352,634 04 | 1826 | 81,054,059 99 | 1859 | 58,496,837 88 |
| 1794 | 78,427,404 77 | 1827 | 73,987,357 20 | 1860 | 65,842,287 88 |
| 1795 | 80,747,587 39 | 1828 | 67,475,043 87 | 1861 | 90,580,873 72 |
| 1796 | 83,762,172 07 | 1829 | 58,421,413 67 | 1862 | 524,176,412 13 |
| 1797 | 82,064,479 33 | 1830 | 48,565,406 50 | 1863 | 1,119,772,138 63 |
| 1798 | 79,228,529 12 | 1831 | 39,123,191 68 | 1864 | 1,815 784,370 57 |
| 1799 | 78,408,669 77 | 1832 | 24,322,235 18 | 1865 | 2,680,647,869 74 |
| 1800 | 82,976,294 35 | 1833 | 7,001,698 83 | 1866 | 2,773,236 173 69 |
| 1801 | 83,038,050 80 | 1834 | 4,760,082 08 | 1867 | 2,678,126,103 87 |
| 1802 | 86,712,632 25 | 1835 | 37,513 05 | 1868 | 2 611,687,851 19 |
| 1803 | 77,054,686 30 | 1836 | 336,957 83 | 1869 | 2,588,452,213 94 |
| 1804 | 86,427,120 88 | 1837 | 3,308,124 07 | 1870 | 2 480,672,427 81 |
| 1805 | 82,312,150 50 | 1838 | 10,434,221 14 | 1871 | 2 353,211,332 32 |
| 1806 | 75,723,270 66 | 1839 | 3,573,343 82 | 1872 | 2,253.251,328 78 |
| 1807 | 69,218,398 64 | 1840 | 5,250,875 54 | 1873 | 2.234 482,993 20 |
| 1808 | 65,196,317 97 | 1841 | 13,594,480 73 | 1874 | 2,251,690,468 43 |
| 1809 | 57,023,192 09 | 1842 | 20,601,226 28 | 1875 | 2,232,284,531 95 |
| 1810 | 53,173 217 52 | 1843 | 32,742,922 00 | 1876 | 2,180,395,067 15 |
| 1811 | 48,005,587 76 | 1844 | 23,461,652 50 | 1877 | 2,205,301,392 10 |
| 1812 | 45,209,737 90 | 1845 | 15.925,303 01 | 1878 | 2,256,205,892 53 |
| 1813 | 55,962,827 57 | 1846 | 15,550,202 97 | 1879 | 2,245 495,072 04 |
| 1814 | 81,487,846 24 | 1847 | 38 826 534 77 | 1880 | 2,120,415,370 63 |
| 1815 | 99,833,660 15 | 1848 | 47,044,862 23 | 1881 | 2,069,013,569 58 |
| 1816 | 127,334,933 74 | 1849 | 63,061 858 69 | 1882 | 1,918,312,994 03 |
| 1817 | 123,491,965 16 | 1850 | 63,452.773 55 | 1883 | 1,884,171,728 07 |
| 1818 | 103,466,633 83 | 1851 | 68 304,796 02 | | |
| 1819 | 95,529,648 28 | 1852 | 66,199,341 71 | | |
| 1820 | 91,015,566 15 | 1853 | 59,803,117 70 | | |
| 1821 | 89,987,427 66 | 1854 | 42,242 222 42 | | |
| 1822 | 93,546,676 98 | 1855 | 35,586,858 56 | | |
| 1823 | 90,875,877 28 | 1856 | 31,972,537 90 | | |

## Amount of Paper Money in the United States.

| Denominations. | 1883. | | |
|---|---|---|---|
| | National bank notes. | Legal tender notes | Total. |
| | *Dollars.* | *Dollars.* | *Dollars* |
| Ones | 573,768 | 30 211 497 | 30.785.265 |
| Twos | 353,232 | 27.156,964 | 27 510,196 |
| Fives | 91.523,205 | 72,994.415 | 164,517 620 |
| Tens | 118 317,310 | 70,958 096 | 189 275 406 |
| Twenties | 83 084 109 | 59 298 309 | 142 382,469 |
| Fifties | 23.265,300 | 23 012,845 | 46 278 145 |
| One-hundreds | 32,559,700 | 33,431.890 | 65.991,590 |
| Five-hundreds | 898,000 | 14.997,500 | 15,895.500 |
| One-thousands | 185 000 | 15,244 500 | 15,429,500 |
| Five-thousands | ..... | 255.000 | 255 000 |
| Ten-thousands | ..... | 120,000 | 120,000 |
| Unredeemed fragments of National Bank Notes | 19,761 | ..... | 19,761 |
| Deduct for Legal Tender Notes destroyed in Chicago fire | ..... | —1,000 000 | —1,000,000 |
| Totals | 350,779,436 | 346 631 0.6 | 697.460,452 |

The printing of one and two dollar notes was discontinued Nov. 1, 1878.

## AREA AND POPULATION OF THE UNITED STATES

| States and Territories | Area in Sq. Miles. | 1790. | 1800. | 1810. | 1820. |
|---|---|---|---|---|---|
| Alabama | 50,722 | ..... | ..... | ..... | 127,901 |
| Arizona | 113,916 | ..... | ..... | ..... | ..... |
| Arkansas | 52,198 | ..... | ..... | ..... | 14,255 |
| California | 188,981 | ..... | ..... | ..... | ..... |
| Colorado | 104,500 | ..... | ..... | ..... | ..... |
| Connecticut | 4,750 | 237,946 | 251,002 | 261,942 | 275,148 |
| Dakota | 150,932 | ..... | ..... | ..... | ..... |
| Delaware | 2,120 | 59,096 | 64,273 | 72,674 | 72,749 |
| District of Columbia | 64 | ..... | 14,093 | 24,023 | 33,039 |
| Florida | 59,268 | ..... | ..... | ..... | ..... |
| Georgia | 58,000 | 82,548 | 162,686 | 252,433 | 340,985 |
| Idaho | 86,294 | ..... | ..... | ..... | ..... |
| Illinois | 55,410 | ..... | ..... | 12,282 | 55,162 |
| Indiana | 33,809 | ..... | 5,641 | 24,520 | 147,178 |
| Iowa | 55,045 | ..... | ..... | ..... | ..... |
| Kansas | 81,318 | ..... | ..... | ..... | ..... |
| Kentucky | 37,680 | 73,677 | 220,955 | 406,511 | 564,135 |
| Louisiana | 41,346 | ..... | ..... | 76,556 | 152,923 |
| Maine | 35,000 | 96,540 | 151,719 | 228,705 | 298,269 |
| Maryland | 11,124 | 319,728 | 341,548 | 380,546 | 407,350 |
| Massachusetts | 7,800 | 378,787 | 422,845 | 472,040 | 523,159 |
| Michigan | 56,451 | ..... | ..... | 4,762 | 8,765 |
| Minnesota | 83,531 | ..... | ..... | ..... | ..... |
| Mississippi | 47,156 | ..... | 8,850 | 40,352 | 75,448 |
| Missouri | 65,530 | ..... | ..... | 20,845 | 66,557 |
| Montana | 143,776 | ..... | ..... | ..... | ..... |
| Nebraska | 75,995 | ..... | ..... | ..... | ..... |
| Nevada | 112,090 | ..... | ..... | ..... | ..... |
| New Hampshire | 9,280 | 141,885 | 183,858 | 214,460 | 244,022 |
| New Jersey | 8,320 | 184,139 | 211,149 | 245,562 | 277,426 |
| New Mexico | 121,201 | ..... | ..... | ..... | ..... |
| New York | 47,000 | 340,120 | 589,051 | 959,049 | 1,372,111 |
| North Carolina | 50,704 | 393,751 | 478,103 | 555,500 | 638,829 |
| Ohio | 39,960 | ..... | 45,365 | 230,760 | 581,295 |
| Oregon | 95,274 | ..... | ..... | ..... | ..... |
| Pennsylvania | 46,000 | 434,373 | 602,365 | 810,091 | 1,047,507 |
| Rhode Island | 1,306 | 68,825 | 69,122 | 76,931 | 83,015 |
| South Carolina | 34,000 | 249,073 | 345,591 | 415,115 | 502,741 |
| Tennessee | 45,600 | 35,691 | 105,602 | 261,727 | 422,771 |
| Texas | 274,356 | ..... | ..... | ..... | ..... |
| Utah | 84,476 | ..... | ..... | ..... | ..... |
| Vermont | 10,212 | 85,425 | 154,465 | 217,895 | 235,966 |
| Virginia | 38,348 | 747,610 | 880,200 | 974,600 | 1,065,116 |
| Washington | 69,994 | ..... | ..... | ..... | ..... |
| West Virginia | 23,000 | ..... | ..... | ..... | ..... |
| Wisconsin | 53,924 | ..... | ..... | ..... | ..... |
| Wyoming | 97,883 | ..... | ..... | ..... | ..... |
| Grand Totals | 2,965,644 | 3,929,214 | 5,308,483 | 7,239,881 | 9,633,822 |

# AT EACH CENSUS FROM 1790 TO 1880

| States and Territories. | 1830. | 1840. | 1850. | 1860. | 1870. | 1880. |
|---|---|---|---|---|---|---|
| Alabama | 309,527 | 590,756 | 771,623 | 964,201 | 996,992 | 1,262,794 |
| Arizona | ..... | ..... | ..... | ..... | 9,658 | 40,441 |
| Arkansas | 30,388 | 97,574 | 209,897 | 435,450 | 484,471 | 802,564 |
| California | ..... | ..... | 92,597 | 379,994 | 560,247 | 864,686 |
| Colorado | ..... | ..... | ..... | 34,277 | 39,864 | 194,649 |
| Connecticut | 297,675 | 309,978 | 370,792 | 460,147 | 537,454 | 622,683 |
| Dakota | ..... | ..... | ..... | 4,837 | 14,181 | 135,180 |
| Delaware | 76,748 | 78,085 | 91,532 | 112,216 | 125,015 | 146,654 |
| Dist. Columbia | 39,834 | 43,712 | 51,687 | 75,080 | 131,700 | 177,638 |
| Florida | 34,730 | 54,477 | 87,445 | 140,424 | 187,748 | 267,351 |
| Georgia | 516,823 | 691,392 | 906,185 | 1,057,286 | 1,184,109 | 1,539,043 |
| Idaho | ..... | ..... | ..... | ..... | 14,999 | 32,611 |
| Illinois | 157,445 | 476,183 | 851,470 | 1,711,951 | 2,539,891 | 3,078,769 |
| Indiana | 343,031 | 685,866 | 988,416 | 1,350,428 | 1,680,637 | 1,978,362 |
| Iowa | ..... | 43,112 | 192,214 | 674,913 | 1,194,020 | 1,624,620 |
| Kansas | ..... | ..... | ..... | 107,206 | 364,399 | 955,966 |
| Kentucky | 687,917 | 779,828 | 982,405 | 1,155,684 | 1,321,011 | 1,648,708 |
| Louisiana | 215,739 | 352,411 | 517,762 | 708,002 | 726,915 | 940,103 |
| Maine | 399,455 | 501,793 | 583,169 | 628,279 | 626,915 | 648,945 |
| Maryland | 447,040 | 470,019 | 583,034 | 687,049 | 780,894 | 934,632 |
| Massachusetts | 610,408 | 737,699 | 994,514 | 1,231,066 | 1,457,351 | 1,783,012 |
| Michigan | 31,639 | 212,267 | 397,654 | 749,113 | 1,184,059 | 1,636,331 |
| Minnesota | ..... | ..... | 6,077 | 172,023 | 439,706 | 780,806 |
| Mississippi | 136,621 | 375,651 | 606,526 | 791,305 | 827,922 | 1,131,592 |
| Missouri | 140,455 | 383,702 | 682,044 | 1,182,012 | 1,721,295 | 2,168,804 |
| Montana | ..... | ..... | ..... | ..... | 20,595 | 39,157 |
| Nebraska | ..... | ..... | ..... | 28,841 | 122,993 | 452,433 |
| Nevada | ..... | ..... | ..... | 6,857 | 42,491 | 62,265 |
| New Hampshire | 269,328 | 284,574 | 317,976 | 326,073 | 318,300 | 346,984 |
| New Jersey | 320,823 | 373,306 | 489,555 | 672,035 | 906,096 | 1,130,983 |
| New Mexico | ..... | ..... | 61,547 | 93,516 | 91,874 | 118,430 |
| New York | 1,918,608 | 2,428,921 | 3,097,394 | 3,880,735 | 4,382,759 | 5,083,810 |
| North Carolina | 737,987 | 753,419 | 869,039 | 992,622 | 1,071,361 | 1,400,047 |
| Ohio | 937,903 | 1,519,467 | 1,980,329 | 2,339,511 | 2,665,260 | 3,198,239 |
| Oregon | ..... | ..... | 13,294 | 52,465 | 90,923 | 174,767 |
| Pennsylvania | 1,348,233 | 1,724,033 | 2,311,786 | 2,906,215 | 3,521,951 | 4,282,786 |
| Rhode Island | 97,199 | 108,830 | 147,545 | 174,620 | 217,353 | 276,528 |
| South Carolina | 581,185 | 594,398 | 668,507 | 703,708 | 705,606 | 995,622 |
| Tennessee | 681,904 | 829,210 | 1,002,717 | 1,109,801 | 1,258,520 | 1,542,463 |
| Texas | ..... | ..... | 212,592 | 604,215 | 818,579 | 1,592,574 |
| Utah | ..... | ..... | 11,380 | 40,273 | 86,786 | 143,906 |
| Vermont | 280,652 | 291,948 | 314,120 | 315,098 | 330,551 | 332,286 |
| Virginia | 1,211,405 | 1,239,797 | 1,421,661 | 1,596,318 | 1,225,163 | 1,512,806 |
| Washington | ..... | ..... | ..... | 11,594 | 23,955 | 75,120 |
| West Virginia | ..... | ..... | ..... | ..... | 442,014 | 618,443 |
| Wisconsin | ..... | 30,945 | 305,391 | 775,881 | 1,054,670 | 1,315,480 |
| Wyoming | ..... | ..... | ..... | ..... | 9,118 | 20,788 |
| Grand Totals | 12,866,020 | 17,069,453 | 23,191,876 | 31,443,321 | 38,558,371 | 50,152,866 |

## ANALYSIS OF THE PUBLIC DEBT OF THE UNITED STATES, FROM JULY 1, 1860, TO JULY 1, 1883.

OFFICIAL STATEMENT FROM THE WARRANT DIVISION, TREASURY DEPARTMENT, WASHINGTON.

| Year ending June 30 | 3 per cents. | 3½ per cents. | 4 per cents. | 4½ per cents. | 5 per cents. | 6 per cents. | 7 3-10 per cents. | Total interest bearing debt. |
|---|---|---|---|---|---|---|---|---|
| 1860.... | ..... | ..... | ..... | ..... | $43,476,300 | $ 21,164,538 | ..... | $ 64,640,838 |
| 1861.... | ..... | ..... | ..... | ..... | 33,022,200 | 57,358,674 | ..... | 90,380,874 |
| 1862.... | ..... | ..... | $ 57,926,116 | ..... | 30,483,000 | 154,313,225 | $122,582,485 | 365,304,826 |
| 1863.... | ..... | ..... | 105,629,385 | ..... | 30,483,000 | 431,444,814 | 139,974,435 | 707,531,634 |
| 1864.... | ..... | ..... | 77,547,696 | ..... | 300,213,480 | 842,882,652 | 139,286,935 | 1,359,930,763 |
| 1865.... | ..... | ..... | 90,496,931 | ..... | 245,709,420 | 1,213,495,170 | 671,610,397 | 2,221,311,918 |
| Aug. 31. | | | | | | | | |
| 1865.... | ..... | ..... | 618,128 | ..... | 269,175,727 | 1,281,736,439 | 830,000,000 | 2,381,530,294 |
| 1866.... | ..... | ..... | 121,341,879 | ..... | 201,982,665 | 1,195,546,041 | 813,460,622 | 2,332,331,207 |
| 1867.... | ..... | ..... | 17,737,025 | ..... | 198,533,435 | 1,543,452,080 | 488,344,847 | 2,248,067,387 |
| 1868.... | $64,000,000 | ..... | 801,361 | ..... | 221,586,185 | 1,878,303,984 | 37,397,197 | 2,202,088,727 |
| 1869.... | 66,125,000 | ..... | ..... | ..... | 221,588,300 | 1,874,347,222 | ..... | 2,162,060,522 |
| 1870.... | 59,550,000 | ..... | ..... | ..... | 221,588,300 | 1,765,317,422 | ..... | 2,046,455,722 |
| 1871.... | 45,885,000 | ..... | 678,000 | ..... | 274,236,450 | 1,613,897,300 | ..... | 1,934,696,750 |
| 1872.... | 24,665,000 | ..... | 678,000 | ..... | 414,567,300 | 1,374,883,800 | ..... | 1,814,794,100 |
| 1873.... | 14,000,000 | ..... | 678,000 | ..... | 414,567,300 | 1,281,238,650 | ..... | 1,710,483,950 |
| 1874.... | 14,000,000 | ..... | 678,000 | ..... | 510,628,050 | 1,213,624,700 | ..... | 1,738,930,750 |
| 1875.... | 14,000,000 | ..... | 678,000 | ..... | 607,132,750 | 1,100,865,550 | ..... | 1,722,676,300 |
| 1876.... | 14,000,000 | ..... | ..... | ..... | 711,685,800 | 984,999,650 | ..... | 1,710,685,450 |
| 1877.... | 14,000,000 | ..... | ..... | 140,000,000 | 703,266,650 | 854,621,850 | ..... | 1,711,888,500 |
| 1878.... | 14,000,000 | ..... | 98,850,000 | 240,000,000 | 703,266,650 | 738,619,000 | ..... | 1,794,735,650 |
| 1879.... | 14,000,000 | ..... | 741,522,000 | 250,000,000 | 508,440,350 | 283,681,350 | ..... | 1,797,643,700 |
| 1880.... | 14,000,000 | ..... | 739,347,800 | 250,000,000 | 484,864,900 | 235,780,400 | ..... | 1,723,993,100 |
| 1881.... | 14,000,000 | ..... | 739,347,800 | 250,000,000 | 439,841,350 | 196,378,600 | ..... | 1,639,567,750 |
| 1882.... | 14,000,000 | 460,461,050 | 739,349,350 | 250,000,000 | ..... | ..... | ..... | 1,463,810,400 |
| 1883.... | 318,204,350 | 32,082,600 | 737,942,200 | 250,000,000 | ..... | ..... | ..... | 1,338,229,150 |

## ANALYSIS OF THE PUBLIC DEBT OF THE UNITED STATES, FROM JULY 1, 1860, TO JULY 1, 1883.

| Year ending June 30. | Annual interest charge. | Debt on which interest has ceased. | Debt bearing no interest. | Outstanding principal. | Cash in Treasury July 1. | Total debt, less cash in Treasury. | Debt per capita. | Interest per capita |
|---|---|---|---|---|---|---|---|---|
| 1860..... | $ 3,443,687 | $ 201,450 | ..... | $ 64,842,288 | $ 4,877,886 | $ 59,964,402 | $ 1.91 | $0.11 |
| 1861..... | 5,092,630 | 199,999 | ..... | 90,580,874 | 2,862,213 | 87,718,660 | 2.74 | 0.16 |
| 1862..... | 22,048,509 | 280,195 | $158,591,390 | 524,176,412 | 18,863,660 | 505,312,752 | 15.45 | 0.67 |
| 1863..... | 41,854,148 | 473,048 | 411,767,456 | 1,119,772,138 | 8,421,401 | 1,111,350,737 | 33.31 | 1.25 |
| 1864..... | 78,853,487 | 416,335 | 455,437,271 | 1,815,784,370 | 106,332,093 | 1,709,452,277 | 50.21 | 2.32 |
| 1865..... | 137,742,617 | 1,245,771 | 458,090,180 | 2,680,647,869 | 5,832,013 | 2,674,815,856 | 76.98 | 3.97 |
| 1865, Aug. 31 | 150,977,697 | 1,503,020 | 461,616,311 | 2,844,649,626 | 88,218,055 | 2,756,431,571 | 78.25 | 4.29 |
| 1866..... | 146,068,196 | 935,092 | 439,969,874 | 2,773,236,173 | 137,200,010 | 2,636,036,163 | 74.32 | 4.12 |
| 1867..... | 138,892,451 | 1,840,615 | 428,218,101 | 2,678,126,103 | 169,974,892 | 2,508,151,211 | 69.26 | 3.84 |
| 1868..... | 128,459,598 | 1,197,340 | 408,401,782 | 2,611,687,851 | 130,834,438 | 2,480,853,413 | 67.10 | 3.48 |
| 1869..... | 125,523,998 | 5,260,181 | 421,134,510 | 2,588,452,213 | 155,680,340 | 2,432,771,873 | 64.43 | 3.32 |
| 1870..... | 118,784,960 | 3,708,641 | 430,508,064 | 2,480,672,427 | 149,502,471 | 2,331,169,956 | 60.46 | 3.08 |
| 1871..... | 111,949,330 | 1,948,902 | 416,565,680 | 2,353,211,332 | 106,217,264 | 2,246,994,068 | 56.81 | 2.83 |
| 1872..... | 103,988,463 | 7,926,797 | 430,530,431 | 2,253,251,328 | 103,470,798 | 2,149,780,530 | 52.95 | 2.56 |
| 1873..... | 98,049,804 | 51,929,710 | 472,069,332 | 2,234,482,993 | 129,020,933 | 2,105,462,060 | 50.49 | 2.35 |
| 1874..... | 98,796,004 | 3,216,590 | 509,543,128 | 2,251,690,468 | 147,541,315 | 2,104,149,153 | 49.10 | 2.31 |
| 1875..... | 96,855,690 | 11,423,820 | 498,182,411 | 2,232,284,531 | 142,243,361 | 2,090,041,170 | 47.44 | 2.19 |
| 1876..... | 95,104,269 | 3,902,420 | 465,807,196 | 2,180,395,067 | 119,469,726 | 2,060,925,340 | 45.48 | 2.10 |
| 1877..... | 93,160,643 | 16,648,860 | 476,764,031 | 2,205,301,392 | 186,025,961 | 2,019,275,431 | 43.31 | 2.00 |
| 1878..... | 94,654,472 | 5,594,560 | 455,875,682 | 2,256,205,892 | 256,823,612 | 1,999,382,280 | 41.67 | 1.97 |
| 1879..... | 83,773,778 | 37,015,630 | 410,835,742 | 2,245,495,072 | 249,080,167 | 1,996,414,905 | 40.42 | 1.69 |
| 1880..... | 79,633,981 | 7,621,455 | 388,800,815 | 2,120,415,370 | 201,083,623 | 1,919,326,748 | 38.26 | 1.58 |
| 1881..... | 75,018,695 | 6,723,865 | 422,721,954 | 2,069,013,570 | 249,363,415 | 1,819,650,154 | 35.22 | 1.45 |
| 1882..... | 57,360,111 | 16,260,805 | 438,241,789 | 1,918,312,994 | 243,289,520 | 1,675,023,474 | 31.72 | 1.09 |
| 1883..... | 51,436,709 | 7,831,415 | 538,111,163 | 1,884,171,728 | 345,389,902 | 1,538,781,825 | 28.41 | .95 |

NOTE.—The annual interest charge is computed upon the amount of outstanding principal at the close of the fiscal year, and is exclusive of interest charge on Pacific Railway Bonds.—1. Five and six per cent bonds issued under Acts of July 17 and August 5, 1861, March 3, 1863, July 14, 1870, and January 20, 1871, continued at three and a half per cent.—2. The Temporary Loan, per Act of July 11, 1862, is included in the 4 per cents from 1862 to 1868 inclusive, with the exception of the amount outstanding for August 31, 1865, this being the date at which the public debt reached its highest point. This loan bore interest from 4 per cent to 6 per cent, and was redeemable on ten days' notice after 30 days, but being constantly changing, it has been considered more equitable to include the whole amount outstanding as bearing 4 per cent interest on an average for the year.

## Population of the Towns and Cities of the United States having a Population of 10,000 and upward, according to the United States Census of 1880.

| | | | |
|---|---|---|---|
| Akron, O. | 16,512 | Dayton, O. | 38,677 |
| Albany, N. Y. | 90,903 | Denver, Col | 35,630 |
| Alexandria, Va. | 13,658 | Derby, Conn. | 11,649 |
| Allegheny, Pa. | 78,631 | Detroit, Mich. | 116,342 |
| Allentown, Pa. | 18,063 | Des Moines, Iowa. | 22,408 |
| Amsterdam, N. Y. | 11,711 | Dover, N. H. | 11,687 |
| Atchison, Kan. | 15,106 | Dubuque, Iowa. | 22,254 |
| Altoona, Pa. | 19,716 | Easton, Pa. | 11,924 |
| Atlanta, Ga. | 37,421 | East Saginaw, Mich. | 19,016 |
| Attleborough, Mass. | 11,111 | Eau Claire, Wis. | 10,118 |
| Auburn, N. Y. | 21,924 | Elizabeth, N. J. | 28,229 |
| Augusta, Ga. | 23,023 | Elmira, N. Y. | 20,541 |
| Aurora, Ill. | 11,825 | Erie, Pa. | 27,730 |
| Austin, Tex. | 10,960 | Evansville, Ind. | 29,280 |
| Baltimore, Md. | 332,190 | Fall River, Mass. | 49,006 |
| Bangor, Me. | 16,857 | Flushing, N. Y. | 15,919 |
| Bay City, Mich. | 20,693 | Fishkill, N. Y. | 10,732 |
| Belleville, Ill. | 10,682 | Fitchburg, Mass. | 12,405 |
| Biddeford, Me. | 12,652 | Fond-du-Lac, Wis. | 13,091 |
| Binghampton, N. Y. | 17,315 | Fort Wayne, Ind. | 26,880 |
| Bloomington, Ill. | 17,184 | Galesburg, Ill. | 11,446 |
| Boston, Mass. | 362,535 | Galveston, Tex. | 22,253 |
| Brockton, Mass. | 13,608 | Georgetown, D. C. | 12,578 |
| Bridgeport, Conn. | 29,148 | Gloucester, Mass. | 19,329 |
| Brookhaven, N. Y. | 11,544 | Grand Rapids, Mich. | 32,015 |
| Brooklyn, N. Y. | 566,689 | Hamilton, O. | 12,122 |
| Buffalo, N. Y. | 155,137 | Hannibal, Mo. | 11,074 |
| Burlington, Iowa. | 19,450 | Hartford, Conn. | 42,553 |
| Burlington, Vt. | 11,364 | Harrisburgh, Pa. | 30,762 |
| Cambridge, Mass. | 52,740 | Haverhill, Mass. | 18,475 |
| Camden, N. J. | 41,658 | Hempstead, N. Y. | 18,160 |
| Canton, O. | 12,258 | Hoboken, N. J. | 30,999 |
| Castleton, N. Y. | 12,679 | Holyoke, Mass. | 21,851 |
| Cedar Rapids, Iowa. | 10,104 | Houston, Tex. | 18,646 |
| Chattanooga, Tenn. | 12,892 | Hyde Park, Ill. | 15,716 |
| Charleston, S. C. | 49,999 | Indianapolis, Ind. | 75,074 |
| Chicago, Ill. | 503,304 | Jackson, Mich. | 16,105 |
| Chester, Pa. | 14,996 | Jacksonville, Ill. | 10,927 |
| Chelsea, Mass. | 21,785 | Jamaica, N. Y. | 10,089 |
| Chicopee, Mass. | 11,325 | Jeffersonville, Ind. | 10,422 |
| Chilicothe, O. | 10,938 | Jersey City, N. J. | 120,728 |
| Cleveland, O. | 160,142 | Johnstown, N. Y. | 16,626 |
| Cincinnati, O. | 255,708 | Joliet, Ill. | 16,145 |
| Cohoes, N. Y. | 19,417 | Kalamazoo, Mich. | 11,937 |
| Columbus, O. | 51,665 | Kansas City, Mo. | 55,813 |
| Columbia, S. C. | 10,040 | Keokuk, Iowa. | 12,117 |
| Concord, N. H. | 13,838 | Kingston, N. Y. | 18,342 |
| Cortlandt, N. Y. | 12,664 | La Crosse, Wis. | 14,505 |
| Council Bluffs, Iowa. | 18,059 | Lafayette, Ind. | 14,860 |
| Covington, Ky. | 29,720 | Lake Township, Ill. | 18,396 |
| Dallas, Tex. | 10,358 | Lancaster, Pa. | 25,769 |
| Danbury, Conn. | 11,669 | Lawrence, Mass. | 39,178 |
| Davenport, Iowa. | 21,834 | Leadville, Col. | 14,820 |

| | | | |
|---|---|---|---|
| Leavenworth, Kan | 16,550 | Peoria, Ill | 29,315 |
| Lenox, N. Y | 10,249 | Philadelphia, Pa | 846,984 |
| Lewiston, Me | 19,083 | Pittsburg, Pa | 156,381 |
| Lexington, Ky | 16,656 | Pittsfield, Mass | 13,367 |
| Lincoln, Neb | 13,004 | Poughkeepsie, N. Y | 20,207 |
| Little Rock, Ark | 13,185 | Portland, Me | 33,810 |
| Lincoln, R. I | 13,765 | Portsmouth, O | 11,314 |
| Lockport, N. Y | 13,522 | Portsmouth, Va | 11,388 |
| Logansport, Ind | 11,198 | Pottsville, Pa | 13,253 |
| Long Island City, N. Y. | 17,117 | Providence, R. I | 104,850 |
| Los Angeles, Cal | 11,311 | Quincy, Mass | 10,529 |
| Louisville, Ky | 123,645 | Quincy, Ill | 27,275 |
| Lowell, Mass | 59,485 | Racine, Wis | 16,031 |
| Lynchburgh, Va | 15,959 | Reading, Pa | 43,280 |
| Lynn, Mass | 38,284 | Richmond, Ind | 12,743 |
| Macon, Ga | 12,748 | Richmond, Va | 63,803 |
| Madison, Wis | 10,325 | Rochester, N. Y | 89,363 |
| Malden, Mass | 12,017 | Rockford, Ill | 13,136 |
| Manchester, N. H | 32,630 | Rock Island, Ill | 11,660 |
| Marlborough, Mass | 10,126 | Rome, N. Y | 12,045 |
| Memphis, Tenn | 33,593 | Rutland, Vt | 12,149 |
| Meriden, Conn | 18,340 | Sacramento, Cal | 21,420 |
| Middletown, Conn | 11,731 | San Antonio, Tex | 20,561 |
| Milwaukee, Wis | 115,578 | San Francisco, Cal | 233,956 |
| Minneapolis, Minn | 46,887 | Saginaw, Mich | 10,525 |
| Mobile, Ala | 31,205 | Salem, Mass | 27,598 |
| Montgomery, Ala | 16,714 | Salt Lake City, Utah | 20,768 |
| Muskegon, Mich | 11,262 | Sandusky, O | 15,838 |
| Nashua, N. H | 13,397 | Saratoga Springs, N. Y | 10,822 |
| Nashville, Tenn | 43,461 | Saugerties, N. Y | 10,375 |
| Newark, N. J | 136,400 | San Jose, Cal | 12,567 |
| New Albany, Ind | 16,422 | Savannah, Ga | 30,681 |
| New Bedford, Mass | 26,875 | Schenectady, N. Y | 13,675 |
| New Britain, Conn | 13,978 | Scranton, Pa | 45,850 |
| New Bruswick, N. J | 17,167 | Shenandoah' Pa | 10,148 |
| Newburgh, N. Y | 18,050 | Shereveport, La | 11,017 |
| Newburyport, Mass | 13,537 | Somerville, Mass | 24,985 |
| New Haven, Conn | 62,882 | South Bend, Ind | 13,279 |
| New London, Conn | 10,529 | Springfield, Ill | 19,746 |
| New Lots, N. Y | 13,681 | Springfield, Mass | 33,340 |
| Newton, Mass | 16,995 | Springfield, O | 20,729 |
| Newport, R. I | 15,693 | Stamford, Conn | 11,298 |
| New Orleans, La | 216,140 | Steubenville, O | 12,093 |
| Newport, Ky | 20,433 | St. Louis, Mo | 350,522 |
| Norfolk, Va | 21,966 | Stockton, Cal | 10,287 |
| North Adams, Mass | 10,192 | St. Joseph, Mo | 32,484 |
| Northampton, Mass | 12,172 | St. Paul, Minn | 41,498 |
| Norwalk, Conn | 13,956 | Syracuse, N. Y | 51,791 |
| Norwich, Conn | 21,141 | Taunton, Mass | 21,213 |
| Norristown, Pa | 13,064 | Topeka, Kan | 15,451 |
| New York, N. Y | 1,206,590 | Toledo, O | 50,143 |
| Oakland, Cal | 34,556 | Trenton, N. J | 29,910 |
| Ogdensburgh, N. Y | 10,340 | Troy, N. Y | 56,747 |
| Omaha, Neb | 30,518 | Terre Haute, Ind | 26,040 |
| Oshkosh, Wis | 15,749 | Utica, N. Y | 33,913 |
| Oswego, N. Y | 21,117 | Vicksburg, Miss | 11,814 |
| Orange, N. J | 13,206 | Virginia City, Nev | 13,705 |
| Oyster, Bay | 11,923 | Wallkill, N. Y | 11,483 |
| Paterson, N. J | 50,887 | Waltham, Mass | 11,711 |
| Pawtucket, R. I | 19,030 | Warwick, R. I | 12,163 |
| Petersburgh, Va | 21,656 | Washington, D. C | 147,370 |

| | | | |
|---|---|---|---|
| Waterbury, Conn | 20,269 | Winona, Minn | 10,208 |
| Watertown, N. Y | 10,697 | Woburn, Mass | 10,938 |
| Watervliet, N. Y | 22,220 | Worcester, Mass | 58,295 |
| Weymouth, Mass | 10,571 | Woonsocket, R. I | 16,053 |
| Wheeling, W. Va | 31,266 | Yonkers, N. Y | 18,892 |
| Williamsport, Pa | 18,934 | York, Pa | 13,940 |
| Wilkesbarre, Pa | 23,339 | Youngstown, O | 15,431 |
| Wilmington, Del | 42,499 | Zanesville, O | 18,120 |
| Wilmington, N. C | 17,361 | | |

## ANNUAL SALARIES OF THE PRINCIPAL CIVIL OFFICERS OF THE UNITED STATES.

### LEGISLATIVE.

| | | | |
|---|---|---|---|
| President | $50,000 | Secretary of War | $8,000 |
| Vice-President | 8,000 | Postmaster-General | 8,000 |
| Secretary of State | 8,000 | Attorney-General | 8,000 |
| Secretary of the Treasury | 8,000 | Speaker House of Represent's, | 8,000 |
| Secretary of the Interior | 8,000 | United States Senators | 5,000 |
| Secretary of the Navy | 8,000 | Representatives in Congress | 5,000 |

### UNITED STATES MINISTER TO

| | | | |
|---|---|---|---|
| England | $17,500 | Central America | $10,000 |
| France | 17,500 | Venezuela | 7,500 |
| Germany | 17,500 | Turkey | 7,500 |
| Russia | 17,500 | Sweden and Norway | 7,500 |
| Spain | 12,000 | Netherlands | 7,500 |
| China | 12,000 | Denmark | 5,000 |
| Japan | 12,000 | Greece | 5,000 |
| Mexico | 12,000 | Uruguay | 5,000 |
| Brazil | 12,000 | Portugal | 5,000 |
| Chili | 10,000 | Switzerland | 5,000 |
| Peru | 10,000 | Liberia | 4,000 |

### JUDGES.

| | |
|---|---|
| Chief Justice of the United States Supreme Court | $10,500 |
| Associate Judges | 10,000 |
| United States Circuit Judges | 6,000 |
| United States District Judges, from $3,500 to | 5,000 |
| Judge of the United States Court of Claims | 4,500 |

### HEADS OF DEPARTMENTS.

| | | | |
|---|---|---|---|
| Director of Geological Surveys, | $6,000 | Superintend't Signal Service | $4,000 |
| Auditor of Railroad Accounts, | 5,000 | Commissioner of Pensions | 3,600 |
| Superintendent of Census | 5,000 | Superin't Nautical Almanac | 3,500 |
| Superin't Naval Observatory | 5,000 | Commander of Marine Corps | 3,500 |
| Commissioner of Patents | 4,500 | Commissioner of Agriculture | 3,000 |
| Director of the Mint | 4,500 | Commis'r of Indian Affairs | 3,000 |
| Commis'r General Land Office, | 4,000 | Commissioner of Education | 3,000 |

## ESTIMATED POPULATION OF THE EARTH,

CLASSIFIED BY RACES AND RELIGIONS.

| RACES. | | RELIGIONS. | |
|---|---|---|---|
| Caucasian, or White | 600,000,000 | Pagans | 676,000,000 |
| Mongolian | 600,000,000 | Christians | 320,000,000 |
| African, or Black | 250,000,000 | Mohammedans | 140,000,000 |
| Copper-Colored | 12,000,000 | Jews | 14,000,000 |

All these collectively are estimated to speak 3,064 languages, and to profess about 1000 different forms of religion.

The CHRISTIANS are divided as follows:—

| Church of Rome. | Protestants. | Greek and East Church. |
|---|---|---|
| 170,000,000 | 90,000,000 | 60,000,000 |

## UNITED STATES PUBLIC LANDS.—WHERE THEY LIE.

| Land States and Territories. | Areas of Lands in 29 States and Territories in which Public Lands have been situated. | | Number of Acres of Public Lands Surveyed. | | | Total Area of Public and Indian Lands remaining unsurveyed & unoffered, to June 30, 1878. Acres. |
|---|---|---|---|---|---|---|
| | Acres. | Square Miles. | Prior to June 30, 1877, not heretofore reported. | Within the Fiscal Year ending June 30, 1878. | Acres Surveyed up to June 30, 1878. | |
| Alabama | 32,462,080 | 50,722 | ..... | 35 | 32,462,115 | ..... |
| Alaska | 369 529 600 | 577,390 | ..... | ..... | ..... | ..... |
| Arizona | 72,906,304 | 113,916 | 196,479 | 418,375 | 5,231,737 | 67,024,503 |
| Arkansas | 33,406,720 | 52,198 | ..... | ..... | 33,406,720 | ..... |
| California | 100 992 640 | 157,801 | 172,534 | 1 202,619 | 46,347,402 | 54,645,238 |
| Colorado | 66,880,000 | 104,500 | 69,364 | 1 113,613 | 22,182,899 | 44,697,101 |
| Dakota | 96,595,840 | 150,932 | ..... | 939,198 | 21,459,412 | 75,137,065 |
| Florida | 37,931,520 | 59,268 | 86 | 2 | 30,103,796 | 7,827,724 |
| Idaho | 55,228,160 | 86,294 | 202,690 | 438,306 | 6,834,009 | 48,394,151 |
| Illinois | 35,462,400 | 55,410 | ..... | 2,692 | 35,465,093 | ..... |
| Indian Terr'y | 44,154,240 | 68,991 | ..... | ..... | 27,003,990 | 17,150,250 |
| Indiana | 21,637,760 | 33,809 | ..... | ..... | 21,637,760 | ..... |
| Iowa | 35,228,800 | 55,045 | ..... | ..... | 35,228,800 | ..... |
| Kansas | 51,769,976 | 80,801 | ..... | ..... | 51,770,240 | ..... |
| Louisiana | 26,461,440 | 41,346 | ..... | ..... | 25,232,044 | 1,229,396 |
| Michigan | 36,128,640 | 56,451 | ..... | ..... | 36,128,640 | ..... |
| Minnesota | 53,459,840 | 83,531 | 48,792 | 357,914 | 39,172,415 | 14,287,425 |
| Mississippi | 30,179,840 | 47,156 | ..... | ..... | 30,179,840 | ..... |
| Missouri | 41,824,000 | 65,350 | ..... | ..... | 41,824,000 | ..... |
| Montana | 92,016,640 | 143,776 | 147 | 624,694 | 10,543,827 | 81,472,813 |
| Nebraska | 48,636,800 | 75,995 | 72,240 | 630,164 | 39,936,807 | 8,699,993 |
| Nevada | 71,737,741 | 112,090 | 96,147 | 188,656 | 11,538,890 | 60,198,710 |
| New Mexico | 77,568,640 | 121,201 | 9,701 | 541,429 | 8,471,880 | 69,096,760 |
| Ohio | 25,576,960 | 39,964 | ..... | ..... | 25,576,960 | ..... |
| Oregon | 60,975,360 | 95,274 | 592,556 | 611,490 | 21,127,862 | 39,847,498 |
| Utah | 54,065,075 | 84,476 | 322,624 | 263,227 | 8,960,385 | 45,104,255 |
| Washington | 44,796,160 | 69,994 | 679,661 | 573,317 | 13,821,545 | 30,974,615 |
| Wisconsin | 34,511,360 | 53,924 | ..... | ..... | 34,511,360 | ..... |
| Wyoming | 62,645,120 | 97,883 | 234,705 | 135,281 | 8,101,049 | 54,544,071 |
| Total | 1,814,769,656 | 2 835,578 | 2 697,727 | 8 041,012 | 724 311,477 | * 720,931,571 |

* Or, adding Alaska, 1,090,461,171 acres.

## PUBLIC LANDS OF THE UNITED STATES.

THE public lands of the United States which are still undisposed of and open to settlement lie in nineteen States and eight Territories. In each case,—except Ohio, Indiana, and Illinois,—land offices are established, in charge of an officer known as Register of the Land Office, where the records of all surveyed lands are kept, and all applications concerning lands in each district are filed and inquiries answered. The public lands are divided into two great classes. The one class has a dollar and a quarter an acre designated as the minimum price, and the other two dollars and a half an acre. Titles to these lands may be acquired by private entry or location under the homestead, pre-emption, and timber-culture laws; or, as to some classes, by purchase for cash, in the case of lands which may be purchased at private sale, or such as have not been reserved under any law. Such tracts are sold on application to the Land Register, who issues a certificate of purchase, the Receiver giving a receipt for the money paid, subject to the issue of a patent, or complete title, if the proceedings are found regular, by the Commissioner of the General Land Office at Washington.

Entries under land warrants (given mostly for military services, under acts of Congress,) have fallen off very largely by the absorption of such warrants, there having been no military bounty land warrants provided for on account of services in the late civil war.

Entries under the pre-emption law are restricted to heads of families, or citizens over twenty-one, who may settle upon any quarter-section (or 160 acres), and have the right of prior claim to purchase, on complying with certain regulations.

The homestead laws give the right to one hundred and sixty acres of a dollar and a quarter lands, or to eighty acres of two dollar and a half lands, to any citizen or applicant for citizenship over twenty-one who will actually settle upon and cultivate the land. This privilege extends only to the surveyed lands, and the title is perfected by the issue of a patent after five years of actual settlement. The only charges in the case of homestead entries are fees and commissions, varying from a minimum of $7 to a maximum of $22 for the whole tract entered, according to the size, value, or place of record.

Another large class of free entries of public lands is that provided for under the timber-culture acts of 1873–78. The purpose of these laws is to promote the growth of forest trees on the public lands. They give the right to any settler who has cultivated for two years as much as five acres in trees, to an eighty-acre homestead; or if ten acres, to a homestead of one hundred and sixty acres; and a free patent for his land is given him at the end of three years, instead of five. The limitation of the homestead laws to one hundred and sixty acres for each settler is extended in the case of timber-culture, so as to grant as many quarter-sections of one hundred and sixty acres each as have been improved by the culture for ten years of forty acres of timber thereon, but the quarter-sections must not lie immediately contiguous. The following is the complete list of United States land offices:—

*Alabama.*—Mobile, Huntsville, Montgomery.

*Arkansas.*—Little Rock, Camden, Harrison, Dardanelle.

*Arizona Territory.*—Prescott, Florence.

*California.*—San Francisco, Marysville, Humboldt, Stockton, Visalia, Sacramento, Los Angelos, Shasta, Susanville, Bodie.

*Colorado.*—Denver City, Fair Play, Central City, Pueblo, Del Norte, Lake City.

*Dakota Territory.*—Sioux Falls, Springfield, Fargo, Yankton, Bismarck, Deadwood.

*Florida.*—Gainesville.

*Idaho Territory.*—Boise City, Lewiston.

*Iowa.*—Fort Des Moines.

*Kansas.*—Topeka, Salina, Independence, Wichita, Kirwin, Concordia, Larned, Hays City.

*Louisiana.*—New Orleans, Monroe, Natchitoches.
*Michigan.*—Detroit, East Saginaw, Reed City, Marquette.
*Minnesota.*—Taylor's Falls, Saint Cloud, Duluth, Fergus Falls, Worthington, New Ulm, Benson, Detroit, Redwood Falls.
*Mississippi.*—Jackson.
*Missouri.*—Boonville, Ironton, Springfield.
*Montana Territory.*—Helena, Bozeman.
*Nebraska.*—Norfolk, Beatrice, Lincoln, Niobrara, Grand Island, North Platte, Bloomington.
*Nevada.*—Carson City, Eureka.
*New Mexico Territory.*—Santa Fe, La Mesilla.
*Oregon.*—Oregon City, Roseburg, La Grand, Lakeview, The Dalles.
*Utah Territory.*—Salt Lake City.
*Washington Territory.*—Olympia, Vancouver, Walla Walla, Colfax.
*Wisconsin.*—Menasha, Falls of St. Croix, Wausau, La Crosse, Bayfield, Eau Claire.
*Wyoming Territory.*—Cheyenne, Evanston.

## FREE HOMESTEADS ON THE PUBLIC LANDS.

THE fact is not so widely known as it should be, that any one willing to work can secure a farm on the public domain of the United States, free of cost.

By our present laws, any citizen or applicant for citizenship, over twenty-one years of age, may enter one quarter-section (that is, 160 acres) of any unappropriated public lands, which are subject to pre-emption at $1.25 per acre. Or he may enter by pre-emption eighty acres of such unappropriated lands, valued and classed at $2.50 per acre by the Government.

This privilege extends to women who may be the heads of families; and each person availing himself or herself of its benefits must make affidavit before the Register of the Land Office of the district in which the entry is to be made, that he or she is the head of a family, or else twenty-one years of age. The affidavit must also set forth that the land entered is for the exclusive use and benefit of the applicant, and for the purpose of actual settlement and cultivation, and not either directly or indirectly for the use or benefit of any other person.

The applicant under the Homestead Law must pay the sum of ten dollars on filing his affidavit with the Register, and is thereupon permitted to enter the 160 acres, or 80 acres on payment of five dollars, as the case may be. But no certificate is given or patent issued for the land until the expiration of five years from the date of the entry above provided for. If, at the expiration of five years, or at any time within two years thereafter, the person making such entry, or his direct heirs, shall prove by two credible witnesses that he, she, or they have resided upon and cultivated the land for five years immediately following the date of its original entry, and shall make affidavit that no part of the land has been alienated, then the settler is entled to the issue of a patent for the land, without further delay. This patent is a valid title from the United States; and those who have earned it by actual residence and cultivation of the land during the full term of five years have nothing to pay, except the original ten dollars for 160 acres, or five dollars for an 80-acre homestead. Any one who chooses to complete his title before the expiration of the five years, with a view to sell or remove, can do so only by payment to the United States of the valuation-price of the land, at $1.25 or $2.50 per acre, as the case may be. But he has at all times the prior right to do this, and so become full owner of the land he has settled, as against any other person.

There is a proviso in the law that no lands acquired under the provisions of the Homestead Act shall be liable for any debts of the settler, contracted prior to the issuing of the patent for his homestead.

There is another proviso, intended to guard the interests of the Government, and compel all pre-emptors of public lands to act in good faith, which

declares that if, at any time after the filing of the required affidavit, and before the expiration of the five years' probationary residence, the pre-emptor shall change his residence, or abandon the land for more than six months at any time, then the land shall revert to the United States Government. No individual is permitted to acquire more than 160 acres under the provisions of the Homestead Act; but there is no limit to the quantity of land which may be purchased by individuals. All existing pre-emption rights are maintained unimpaired by the provisions of the act.

The five years' residence required of all other settlers under the Homestead Law is waived in favor of all soldiers or sailors who served ninety days or longer in the United States army or navy during the war of 1861–65, and were honorably discharged. Every such soldier (or his widow, or children, in case of his decease,) is entitled to free entry of 160 acres of the public lands on condition of actual residence and cultivation of the same for one year only.

Any settler on the public lands who has set out and cultivated for two years as much as five acres of trees on an 80-acre homestead, or ten acres on a homestead of 160 acres, is entitled to receive a free patent for his land at the end of three years, instead of five. And any person who has planted and cultivated for ten years forty acres of timber on any quarter-section of the public lands is entitled to a patent for each 160 acres so improved, on payment of $10, provided that only one quarter in any section shall be thus granted. This is the only exception to the limitation of free homesteads to 160 acres to any one person, unless in the case of a settler under the army provision, who is not debarred, through having occupied a homestead under the law previously, from acquiring a second 160 acres through his service in the army.

## THE CANALS OF THE UNITED STATES, ETC.

| NAMES. | Connecting Points. | Miles | Locks | Cost. |
|---|---|---|---|---|
| DELAWARE CANAL. | | | | |
| Chesapeake & Delaware | Delaware City to Ches. City | 12.6 | 3 | $3,547,561 |
| MARYLAND CANAL. | | | | |
| Chesapeake & Ohio | Georgetown to Cumberland, Md | 184½ | 74 | 11,375,000 |
| ILLINOIS CANAL. | | | | |
| Illinois & Michigan | Chicago to La Salle, Ill | 96 | 17 | 6,170,226 |
| INDIANA CANAL. | | | | |
| Wabash & Erie | Evansville to Ohio State Line | 374 | 64 | 6,000,000 |
| NEW JERSEY CANALS. | | | | |
| Delaware & Raritan | New Brunswick to Bordentown | 43 | 14 | 3,935,287 |
| Morris & Essex | Jersey City to Phillipsburg | 101 | 29 | 2,825,997 |
| NEW YORK CANALS. | | | | |
| Baldwinsville | | 5¾ | 1 | 23,556 |
| Black R. (canal & feeder) | | 50 | 109 | 3,224,779 |
| Black Riv. improvement | | 42 | 1 | |
| Cayuga & Seneca enlarg | | 23 | 11 | 1,520,542 |
| Champlain | | 66 | 20 | ..... |
| Champlain, Glens Falls | feeder | 12 | 12 | ..... |
| Chemung (canal & feed) | | 39 | 53 | 1,273,261 |
| Chenango | | 97 | 116 | 2,782,124 |

## THE CANALS OF THE UNITED STATES, ETC.—(*Continued.*)

| Names. | Connecting Points. | Miles | Locks | Cost. |
|---|---|---|---|---|
| **New York Canals.** | | | | |
| Crooked Lake | | 8 | 27 | $ 333,287 |
| Erie (original) | Buffalo to Albany | 363 | 83 | 46,018,234 |
| Erie (enlargement) | Buffalo to Albany | 350½ | 72 | |
| Genesee Valley | | 124¾ | 112 | 5,827,813 |
| Oneida Lake | | 7 | 7 | 64,837 |
| Oneida Riv. improvem't | | 20 | 2 | 146,944 |
| Oswego (enlargement) | | 38 | 18 | 3,490,949 |
| **Ohio Canals.** | | | | |
| Hocking | Carroll to Athens | 56 | 26 | 975,481 |
| Miami | Cincinnati to Toledo | 291 | 105 | 7,454,727 |
| Muskingum improve'nt | Dresden to Marietta | 91 | 12 | 1,627,318 |
| Ohio | Cleveland to Portsmouth | 332 | 152 | 4,695,204 |
| Walhonding | Branch of the Ohio | 25 | 11 | 607,269 |
| **Pennsylvania Canals.** | | | | |
| Delaware and Hudson | Honesdale to Rondout, N. Y. | 108 | 106 | 6,317,653 |
| Delaware Division | Easton to Bristol | 60 | 32 | ..... |
| East Division | Duncan's Island to Columbia | 46 | 11 | |
| Juniata Division | Duncan's Isl'd to Hollidaysburg | 127 | 66 | |
| North Branch Division | Northumberland to Wilkesbarre | 64 | 43 | 7,731,750 |
| West Branch Division | Northumberland to Far'ndsville | 80½ | | |
| Susquehanna Division | Duncan's Isl'd to Northumberl'd | 41 | 44 | |
| Junction | State line to Elmira, N. Y. | 18 | 11 | ..... |
| Lehigh Coal and Nav | Easton to Coalport | 48 | 53 | 4,455,000 |
| Monongahela Nav | Pittsburg to North Geneva | 85 | 8 | 1,132,452 |
| Schuylkill Coal and Nav | Mill Creek to Philadelphia | 108 | 71 | 13,207,752 |
| Susquehanna | Columbia to Havre de Grace | 45 | 30 | 4,857,105 |
| Union | Middletown to Reading | 77½ | 132 | 5,907,000 |
| Wiconisco | Millersburg to Clark's Ferry | 12 | 7 | 512,000 |
| **Virginia Canals.** | | | | |
| Albemarle & Chesapeak | | 8½ | .. | 170,000 |
| Alexandria & George't'n | Alexandria to Georgetown | 7 | .. | 1,068,762 |
| Dismal Swamp | Elizabeth R. to Drummond Lake | 33 | .. | 1,151,000 |
| James Riv. & Kanawha | Richmond to Buchanan | 196½ | 90 | 6,139,280 |
| **Ship Canals.** | | | | |
| Beauharnois, Canada | | 11¼ | 9 | 1,611,424 |
| Cornwall, Canada | | 11½ | 7 | 1,933,153 |
| Lachine, Canada | Around rapids above Montreal | 8½ | 5 | 2,587,533 |
| Galop's, Farran's Point, | and Rapide Plat, Canada | 12½ | 6 | 1,320,656 |
| Welland, Canada | Lake Ontatio to Lake Erie | 27 | 27 | 7,638,240 |
| Michigan Ship Canal | Around St. Mary's Falls | 1 | 2 | ..... |
| Louisville & Portland | Round Falls of Ohio | 2 | 3 | 4,250,000 |
| Caledonia, Scotland | Moray Frith to Loch Linnhe | 60 | .. | 5,118,140 |
| Crinan, Scotland | Loch Gilp to Jura Sound | 9 | .. | ..... |
| North Clyde, Scotland | | 35 | 39 | ..... |
| North Holland | Amsterdam to Zuyder Zee | 51 | 2 | ..... |
| North Sea, Holland | | 14½ | .. | ..... |
| Suez | Port Said to Suez, about | 100 | .. | 81,000,000 |

# The Army of the United States.

The army of the United States on the 27th of October, 1883, consisted of the following forces, in officers and men:

| | Officers. | Enlisted Men. |
|---|---|---|
| Ten cavalry regiments | 429 | 6,811 |
| Five artillery regiments | 280 | 2,410 |
| Twenty-five infantry regiments | 861 | 10,555 |
| Engineer battalion, recruiting parties, ordinance department, hospital service, Indian scouts, West Point, Signal detachment and general service | 573 | 3,559 |
| Total | 2,143 | 23,335 |

For convenience, and to fix responsibility, the country is divided into three military divisions, each with several departments, as follows:

1. Military division of the Missouri, commanded by Major-General John Pope, headquarters Chicago, comprehends the departments of the Missouri (Maj.-Gen. John Pope); Texas (Brig.-Gen. C. C. Augur); Dakota (Brig.-Gen. A. H. Terry); and the Platte (Brig.-Gen. O. O. Howard). There are 8 regiments of cavalry and 20 of infantry in this division.

2. Military division of the Atlantic, commanded by Major-General Winfield S. Hancock, headquarters New York. Includes department of the East (Maj.-Gen. Hancock); department of the South (Col. H. J. Hunt, Newport Barracks, Ky.) The department of West Point, formerly attached to this division, went out of existence as a department, September 1, 1882. This division includes 4 regiments of artillery and 2 of infantry.

3. Military division of the Pacific, commanded by Major-General John M. Schofield, headquarters San Francisco. Includes departments of California (Maj.-Gen. J. M. Schofield); the Columbia (Brig.-Gen. Nelson A. Miles); Arizona (Brig.-Gen. George Crook); comprises 1 regiment of artillery, 3 of cavalry and four of infantry.

The maximum military force allowed under existing laws is 2,155 commissioned officers and 25,000 enlisted men. The report of the General of the Army exhibits the actual number in service as 2,143 officers and 23,335 enlisted men, October 27, 1883. The following table exhibits the number in each rank of the army:

1. COMMISSIONED OFFICERS: Colonels, 66; lieutenant-colonels, 85; majors, 243; captains, 603; adjutants, 40; regimental quarter-masters, 40; first lieutenants, 563; second lieutenants, 433; chaplains, 34; storekeepers, 25; total, 2,143.

2. THE ENLISTED MEN embrace 39 sergeant-majors, 40 quarter-master sergeants, 638 musicians, 196 trumpeters, 10 saddler-sergeants, 114 ordnance sergeants, 146 hospital stewards, 134 commissary-sergeants, 424 first sergeants, 2,107 sergeants, 1,647 corporals, 225 farriers, 82 artificers, 106 saddlers, 75 wagoners, and 17,350 privates; total, 23,335. Besides these, there are employed in the Signal Corps, 495 non-commissioned officers and privates; Military Academy, 7 professors, 279 cadets, 204 enlisted men; total, 508.

The number of retired army officers is 424; number of privates discharged during the fiscal year 1883, 5,950; number died during same period, 221; number deserted, 3,578; number enlisted and re-enlisted, 8,998.

| | | | Entered the Army. |
|---|---|---|---|
| General of the Army | Lieut.-Gen. Philip H. Sheridan | | 1853. |
| Major-Generals— | | | |
| (Limited by law to three) | Winfield S. Hancock | | 1844. |
| | John M. Schofield | | 1853. |
| Brigadier-Generals— | John Pope | | 1842. |
| (Limited by law to six) | Oliver O. Howard | | 1854. |
| | Alfred H. Terry | | 1865. |
| | Christopher C. Augur | | 1843. |
| | George Crook | | 1852. |
| | Nelson A. Miles | | 1866. |
| | Ranald S. Mackenzie | | 1862. |

## PAY OF THE ARMY OF THE UNITED STATES.

| GRADE. | Pay of Officers in Active Service. Yearly Pay. | | | | | Pay of Retired Officers. Yearly Pay. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | First 5 years' service. | After 5 years' service. | After 10 yrs' service. | After 15 yrs' service. | After 20 yrs' service. | First 5 years' service. | After 5 years' service. | After 10 yrs' service. | After 15 yrs' service. | After 20 yrs' service. |
| | | 10 pr.ct. | 20 pr.ct. | 30 pr.ct. | 40 pr.ct. | | | | | |
| General | $13,500 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lieutenant-General | 11,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Major-General | 7,500 | ..... | ..... | ..... | ..... | $5,625 | ..... | ..... | ..... | ..... |
| Brigadier-General | 5,500 | ..... | ..... | ..... | ..... | 4,125 | ..... | ..... | ..... | ..... |
| Colonel | 3,500 | $3,850 | $4,200 | *$4,500 | *$4,500 | 2,625 | $2,887 | $3,150 | $3,375 | $3,375 |
| Lieutenant-Colonel | 3,000 | 3,300 | 3,600 | 3,900 | *4,000 | 2,250 | 2,475 | 2,700 | 2,925 | 3,000 |
| Major | 2,500 | 2,750 | 3,000 | 3,250 | 3,500 | 1,875 | 2,062 | 2,250 | 2,437 | 2,625 |
| Captain, mounted | 2,000 | 2,200 | 2,400 | 2,600 | 2,800 | 1,500 | 1,650 | 1,800 | 1,950 | 2,100 |
| Captain, not mounted | 1,800 | 1,980 | 2,160 | 2,340 | 2,520 | 1,350 | 1,485 | 1,620 | 1,755 | 1,890 |
| Regimental Adjutant | 1,800 | 1,980 | 2,160 | 2,340 | 2,520 | ..... | ..... | ..... | ..... | ..... |
| Regimental Quartermaster | 1,800 | 1,980 | 2,160 | 2,340 | 2,520 | ..... | ..... | ..... | ..... | ..... |
| 1st Lieutenant, mounted | 1,600 | 1,760 | 1,920 | 2,080 | 2,240 | 1,200 | 1,320 | 1,440 | 1,560 | 1,680 |
| 1st Lieutenant, not mounted | 1,500 | 1,650 | 1,800 | 1,950 | 2,100 | 1,125 | 1,237 | 1,350 | 1,462 | 1,575 |
| 2d Lieutenant, mounted | 1,500 | 1,650 | 1,800 | 1,950 | 2,100 | 1,125 | 1,237 | 1,350 | 1,462 | 1,575 |
| 2d Lieutenant, not mounted | 1,400 | 1,540 | 1,680 | 1,820 | 1,960 | 1,125 | 1,155 | 1,260 | 1,365 | 1,470 |
| Chaplain | 1,500 | 1,650 | 1,800 | 1,950 | 2,100 | 1,350 | 1,485 | 1,620 | 1,755 | 1,890 |

* The maximum pay of colonels is limited to $4,500, and of lieutenant-colonels to $4,000.

# The Navy of the United States.

There were in service December 1883, 45 naval steam vessels, all screw propellers except six, besides 14 wooden sailing vessels, 19 iron-clad vessels 2 torpedo rams and 16 tugs; total 96, of which about 52 were in efficient service. The number of guns is 575.

The active list of the Navy is composed of 1 admiral, 1 vice-admiral, 7 rear admirals, 21 commodores, 46 captains, 87 commanders, 78 lieutenant-commanders, 272 lieutenants, 94 lieutenants junior grade, 97 ensigns, 103 ensigns junior grade, 119 naval cadets (who have passed the four years academic course, and are performing two years service at sea before final graduation) and 120 naval cadets on probation at the Naval Academy, all of whom are officers of the line.

Of the staff there are 1 surgeon-general, 15 medical directors, 15 medical inspectors, 50 surgeons, 79 passed assistant surgeons, 9 assistant surgeons, 1 paymaster-general, 13 pay directors, 13 pay inspectors, 49 paymasters, 30 passed assistant paymasters, 20 assistant paymasters, 1 engineer-in-chief, 70 chief engineers, 94 passed assistant engineers, 78 assistant engineers, 24 chaplains, 11 professors of mathematics, 1 secretary for the admiral and 1 for the vice-admiral, 1 chief constructor, 11 naval constructors, 9 assistant constructors, and 10 civil engineers.

The warrant officers consist of 50 boatswains, 48 gunners, 53 carpenters, 37 sailmakers, and 38 mates.

The retired list is composed of officers of the line, as follows: 43 rear-admirals, 20 commodores, 11 captains, 12 commanders, 16 lieutenant-commanders, 16 lieutenants, 11 lieutenants junior grade, 16 masters, 6 ensigns, 1 ensign junior grade. Staff officers, viz: 21 medical directors, 2 medical inspectors, 4 surgeons, 5 passed assistant surgeons, 7 assistant surgeons, 10 pay directors, 2 pay inspectors, 4 paymasters, 2 passed assistant paymasters, 1 assistant paymaster, 12 chief engineers, 20 passed assistant engineers, 26 assistant engineers, 1 naval constructor, 8 chaplains, and 6 professors of mathematics. Warrant officers, viz: 13 boatswains, 10 gunners, 9 carpenters, and 7 sailmakers.

The active list is therefore composed of 1,116 officers of the line, 606 officers of the staff, and 226 warrant officers; total, 1,948 officers of all grades.

The retired list is composed of 152 officers of the line, 131 officers of the staff, and 39 warrant officers; total, 322.

They were (July, 1883) in the service, provided for the Navy appropriation act for the fiscal year 1884, 7,500 enlisted men, and 750 boys.

The marine corps consists of 89 commissioned officers, 372 non-commissioned officers, 31 musicians, 96 drummers and fifers, and 1,500 enlisted men; total, 2,028.

# Navy-Yards of the United States.

1. Brooklyn Navy-Yard, Brooklyn, N. Y.
2. Charlestown Navy-Yard, Charlestown, Mass.
3. Gosport Navy-Yard, near Norfolk, Va.
4. Kittery Navy-Yard, opposite Portsmouth, N. H.
5. League Island Navy-Yard, seven miles below Philadelphia.
6. Mare Island Navy-Yard, near San Francisco, Cal.
7. New London Naval Station (unfinished), New London, Conn.
8. Pensacola Navy-Yard, Pensacola, Florida.
9. Washington City Navy-Yard, Washington, D. C.

## PAY OF THE NAVY OF THE UNITED STATES.

| | At Sea. | On Shore Duty. | On Leave, waiting orders. |
|---|---|---|---|
| Admiral | $13.000 | $13.000 | $13.000 |
| Vice-Admiral | 9.000 | 8.000 | 6.000 |
| Rear-Admirals | 6.000 | 5.000 | 4.000 |
| Commodores | 5.000 | 4.000 | 3.000 |
| Captains | 4.500 | 3.500 | 2.800 |
| Commanders | 3,500 | 3,000 | 2,300 |
| Lieutenant-Commanders— | | | |
| First four years after date of commission | 2.800 | 2.400 | 2.000 |
| After four years from date of commission | 3,000 | 2,600 | 2,200 |
| Lieutenants— | | | |
| First five years | 2.400 | 2.000 | 1.600 |
| After five years | 2,600 | 2,200 | 1,800 |
| Masters— | | | |
| First five years | 1.800 | 1.500 | 1,200 |
| After five years | 2,000 | 1,700 | 1,400 |
| Ensigns— | | | |
| First five years | 1.200 | 1.000 | 800 |
| After five years | 1.400 | 1,200 | 1,000 |
| Midshipmen | 1,000 | 800 | 600 |
| Cadet Midshipmen | 500 | 500 | 500 |
| Mates | 900 | 700 | 500 |
| Medical and Pay Directors and Medical and Pay Inspectors and Chief Engineers, having the same rank at sea | 4,400 | ..... | ..... |
| Fleet Surgeons, Fleet Paymasters, and Fleet Engineers | 4,400 | ..... | ..... |
| Surgeons, Paymasters, and Chief Engineers— | | | |
| First five years after date of commission | 2,800 | 2,400 | 2.000 |
| Second five years | 3.200 | 2.800 | 2,400 |
| Third five years | 3.500 | 3.200 | 2.600 |
| Fourth five years | 3,700 | 3.600 | 2.800 |
| After twenty years | 4,200 | 4,000 | 3,000 |
| Passed Assistant Surgeons, Passed Assistant Paymasters, and Passed Assistant Engineers— | | | |
| First five years after date of appointment | 2,000 | 1.800 | 1,500 |
| After five years | 2,200 | 2,000 | 1,700 |
| Assistant Surgeons, Assistant Paymasters, and Assistant Engineers— | | | |
| First five years after date of appointment | 1,700 | 1,400 | 1.000 |
| After five years | 1,900 | 1,600 | 1,200 |
| Chaplains— | | | |
| First five years | 2,500 | 2,000 | 1.600 |
| After five years | 2,800 | 2,300 | 1,900 |
| Boatswains, Gunners, Carpenters, and Sailmakers | | | |
| First three years | 1.200 | 900 | 700 |
| Second three years | 1,300 | 1.000 | 800 |
| Third three years | 1,400 | 1,300 | 900 |
| Fourth three years | 1.600 | 1.300 | 1.000 |
| After twelve years | 1.800 | 1,600 | 1,200 |
| Cadet Engineers (after examination) | 1,000 | 800 | 600 |

# THE MILITARY STRENGTH OF THE UNITED STATES DURING THE REBELLION.

NUMBER OF MEN FURNISHED BY EACH STATE AND TERRITORY, FROM APRIL 15, 1861, TO JUNE 30, 1865.

| States and Territories. | Men furnished. | Paid commutation. |
|---|---|---|
| Maine | 69,738 | 2,007 |
| New Hampshire | 33,913 | 692 |
| Vermont | 33,272 | 1,974 |
| Massachusetts | 146,467 | 5,318 |
| Rhode Island | 23,248 | 463 |
| Connecticut | 55,755 | 1,515 |
| New York | 445,959 | 18,197 |
| New Jersey | 75,315 | 4,196 |
| Pennsylvania | 338,155 | 28,171 |
| Delaware | 12,265 | 1,386 |
| Maryland | 46,053 | 3,678 |
| West Virginia | 32,003 | ..... |
| Dist. of Columbia | 16,534 | 338 |
| Ohio | 310,654 | 6,479 |
| Indiana | 194,363 | 784 |
| Illinois | 258,162 | 55 |
| Michigan | 88,111 | 2,008 |
| Wisconsin | 91,021 | 5,097 |
| Minnesota | 24,002 | 1,032 |
| Iowa | 75,793 | 67 |
| Missouri | 108,773 | ..... |
| Kentucky | 75,275 | 3,265 |
| Kansas | 20,095 | 2 |
| Tennessee | 31,092 | ..... |
| Arkansas | 8,289 | ..... |
| North Carolina | 3,156 | ..... |
| California | 15,725 | ..... |
| Nevada | 1,080 | ..... |
| Oregon | 1,810 | ..... |
| Washington Ter. | 964 | ..... |
| Nebraska Terr'y. | 3,157 | ..... |
| Colorado Terr'y. | 4,903 | ..... |
| Dakota Territory | 206 | ..... |
| New Mexico Ter. | 6,561 | ..... |
| Alabama | 2,576 | ..... |
| Florida | 1,290 | ..... |
| Louisiana | 5,224 | ..... |
| Mississippi | 545 | ..... |
| Texas | 1,965 | ..... |
| Indian Nations | 3,530 | ..... |
| Totals | 2 666 999 | 86,724 |

NUMBER OF MEN CALLED FOR, PERIODS OF SERVICE, AND NUMBER OF MEN OBTAINED, UNDER EACH CALL, TO JUNE 30, 1865.

| Date of Call. | number called for. | periods of service. | number obtain'd |
|---|---|---|---|
| April 15, 1861, | 75,000 | 3 mos. | 93,326 |
| May 3, 1861 | 82,748 | 3 yrs. | 714,231 |
| July 22&25, '61 | 500,000 | | |
| May, June, '62 | ..... | 3 mos. | 15,007 |
| July 2, 1862 | 300,000 | 3 yrs. | 431,958 |
| August 4, 1862 | 300,000 | 9 mos. | 87,588 |
| June 15, 1863 | 100,000 | 6 mos. | 16,361 |
| October 17, '63 | 300,000 | 3 yrs. | 374,807 |
| Febru'y 1, '64 | 200,000 | | |
| March 14, 1864 | 200,000 | 3 yrs. | 284,021 |
| April 23, 1864, | 85,000 | 100 days | 83,652 |
| July 18, 1864 | 500,000 | 1,2,3 yrs | 384,882 |
| Dec'r 19, 1864 | 300,000 | 1,2,3 yrs | 204,568 |
| Totals | 2 942,748 | | 2 690,401 |

The calls of October 17, 1863, and February 1, 1864, were combined, and the product of the draft of July, 1863, was credited thereon.

In addition to the above number, 63,322 men were obtained, chiefly from the territories and the rebellious States, under different calls, and for various periods of service.

The whole number of men obtained by draft was 168,649. The whole number of colored troops obtained was 186,097.

STRENGTH OF THE UNITED STATES ARMY AT VARIOUS DATES.

| Date. | Present | Absent. | Total. |
|---|---|---|---|
| January 1, '61, | 14,663 | 1,704 | 16,367 |
| July 1, 1861 | 183,588 | 3,163 | 186,751 |
| January 1, '62, | 527,204 | 48,713 | 575,917 |
| January 1, '63, | 698,802 | 219,389 | 918,191 |
| January 1, '64, | 611,250 | 249,487 | 860,737 |
| January 1, '65, | 620,924 | 338,536 | 959,466 |
| May 1, 1865 | 797,807 | 202,709 | 1 000,516 |

## AGGREGATE OF TROOPS FURNISHED THE UNION ARMY BY STATES, 1861-65.

| States and Territories. | Population in 1860. | Troops furnished 1861-65. | Color'd Troops 1861-65 | Number of men drafted. | | | | | Bounties paid by States. | Per ct. men to Pop. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Num. drawn. | Failed to report. | Exempted | Furn'd sub. or com'n. | Held for serv. | | |
| Connectic't | 460,147 | 57,379 | 1,764 | 12,031 | 1,014 | 6,804 | 3,842 | 202 | $6,887,554 | 12.4 |
| Maine | 628,279 | 72,114 | 104 | 27,324 | 3,760 | 12,997 | 4,946 | 1,991 | 7,837,644 | 11.5 |
| Massachu's | 1,231,066 | 152,048 | 3,966 | 41,582 | 5,167 | 27,070 | 8,383 | 912 | 22,965,550 | 12.3 |
| NewHamp. | 326,073 | 34,629 | 125 | 10,806 | 464 | 5,478 | 3,654 | 210 | 9,636,313 | 10.6 |
| R. Island | 174,620 | 23,699 | 1,837 | 4,321 | 249 | 2,809 | 1,142 | 117 | 820,769 | 13.6 |
| Vermont | 315,098 | 35,262 | 120 | 7,743 | 429 | 4,096 | 2,646 | 437 | 4,528,775 | 11.2 |
| N. England States | 3,135,283 | 375,131 | 7,916 | 103,807 | 11,083 | 59,254 | 24,613 | 3,869 | 52,676,605 | 12.0 |
| New Jersey | 672,035 | 81,010 | 1,185 | 32,325 | 5,205 | 8,224 | 9,650 | 951 | 23,868,967 | 12.0 |
| New York. | 3,880,735 | 467,047 | 4,125 | 151,488 | 31,745 | 68,006 | 31,529 | 3,210 | 86,629,228 | 12.0 |
| Pennsyl'ia | 2,906,215 | 366,107 | 8,612 | 178,873 | 31,309 | 70,913 | 40,807 | 8,615 | 43,154,987 | 12.5 |
| Mid. States | 7,458,985 | 914,164 | 13,922 | 362,686 | 69,259 | 147,143 | 81,986 | 12,776 | 153,653,182 | 12.2 |
| Col. Ter. | 34,277 | 4,903 | 95 | .... | .... | .... | .... | .... | ..... | 14.3 |
| Dakota T. | 4,837 | 206 | .... | .... | .... | .... | .... | .... | ..... | 4.2 |
| Illinois | 1,711,951 | 259,147 | 1,811 | 32,035 | 9,519 | 9,555 | 5,459 | 3,538 | 17,296,205 | 15.1 |
| Indiana | 1,350,428 | 197,147 | 1,537 | 41,158 | 6,235 | 15,478 | 5,966 | 7,597 | 9,182,354 | 14.6 |
| Iowa | 674,913 | 76,309 | 440 | 7,548 | 702 | 2,446 | 1,264 | 1,862 | 1,615,171 | 11.3 |
| Kansas | 107,206 | 20,151 | 2,080 | 1,420 | 419 | 287 | 210 | 119 | 57,407 | 18.8 |
| Michigan | 749,113 | 89,372 | 1,387 | 22,122 | 4,294 | 7,130 | 3,773 | 1,809 | 9,664,855 | 11.9 |
| Minnesota | 172,023 | 25,052 | 104 | 10,795 | 2,058 | 4,449 | 1,291 | 862 | 2,000,464 | 14.5 |
| Nebraska T | 28,841 | 3,157 | .... | .... | .... | .... | .... | .... | ..... | 10.9 |
| N. Mexico T | 93,516 | 6,561 | .... | .... | .... | .... | .... | .... | ..... | 7.0 |
| Ohio | 2,339,511 | 319,659 | 5,092 | 50,400 | 9,368 | 19,751 | 10,988 | 4,241 | 23,557,373 | 13.6 |
| Wisconsin | 775,881 | 96,424 | 165 | 38,395 | 11,742 | 14,732 | 6,718 | 3,722 | 5,855,356 | 12.4 |
| Wst. States & Ter. | 8,042,497 | 1,098,088 | 12,711 | 203,924 | 44,337 | 73,828 | 35,669 | 23,750 | 69,229,185 | 13.6 |
| California | 379,994 | 15,725 | .... | .... | .... | .... | .... | .... | ..... | 4.1 |
| Nevada | 6,857 | 1,080 | .... | .... | .... | .... | .... | .... | ..... | 15.7 |
| Oregon | 52,465 | 1,810 | .... | .... | .... | .... | .... | .... | ..... | 3.4 |
| Wash. Ter. | 11,594 | 964 | .... | .... | .... | .... | .... | .... | ..... | 8.3 |
| Pacific Sts. | 450,910 | 19,579 | .... | .... | .... | .... | .... | .... | ..... | 4.3 |
| Delaware | 112,216 | 13,670 | 954 | 8,635 | 1,443 | 4,170 | 2,534 | 425 | 1,136,599 | 12.2 |
| Dist. of Col. | 75,080 | 16,872 | 3,269 | 14,338 | 5,954 | 5,665 | 1,751 | 968 | 134,010 | 22.4 |
| Kentucky | 1,155,684 | 79,025 | 23,703 | 29,421 | 2,503 | 8,088 | 5,787 | 1,860 | 692,577 | 6.8 |
| Maryland | 687,049 | 50,316 | 8,718 | 29,319 | 9,207 | 11,011 | 6,134 | 1,426 | 6,271,992 | 7.3 |
| Missouri | 1,182,012 | 109,111 | 8,344 | 21,519 | 9,444 | 5,781 | 1,638 | 1,031 | 1,282,149 | 9.2 |
| W. Virg'ia | 393,234 | 32,068 | 196 | 3,180 | 1,014 | 569 | 219 | 242 | 864,737 | 8.1 |
| Border Sts. | 3,605,275 | 301,062 | 45,184 | 106,412 | 36,565 | 35,284 | 18,063 | 5,952 | 10,382,064 | 8.3 |
| Alabama | 964,201 | 2,576 | 4,969 | .... | .... | .... | .... | .... | ..... | .2 |
| Arkansas | 435,450 | 8,289 | 5,526 | .... | .... | .... | .... | .... | ..... | 1.9 |
| Florida | 140,424 | 1,290 | 1,044 | .... | .... | .... | .... | .... | ..... | .9 |
| Georgia | 1,057,286 | .... | .... | .... | .... | .... | .... | .... | ..... | .0 |
| Louisiana | 708,002 | 5,224 | 3,486 | .... | .... | .... | .... | .... | ..... | .7 |
| Mississippi | 791,305 | 545 | 17,869 | .... | .... | .... | .... | .... | ..... | .0 |
| N. Carolina | 992,622 | 3,156 | 5,035 | .... | .... | .... | .... | .... | ..... | .3 |
| S. Carolina | 703,708 | .... | 5,462 | .... | .... | .... | .... | .... | ..... | .0 |
| Tennessee | 1,109,801 | 31,092 | 20,133 | .... | .... | .... | .... | .... | ..... | 2.8 |
| Texas | 604,215 | 1,965 | 47 | .... | .... | .... | .... | .... | ..... | .3 |
| Virginias | 1,203,084 | .... | .... | .... | .... | .... | .... | .... | ..... | .0 |
| South'nSts. | 8,710,098 | 54,137 | 63,571 | .... | .... | .... | .... | .... | ..... | .6 |
| Ind. Nation | .... | 3,530 | .... | .... | .... | .... | .... | .... | ..... | .. |
| C'dTroops1 | .... | 93,441 | .... | .... | .... | .... | .... | .... | ..... | .. |
| Grand Tot. | .... | 22,859,132 | 173,079 | 776,829 | 161,244 | 315,509 | 73,607 | 46,347 | 285,941,036 | 9.1 |
| At large | .... | .... | 733 | | | | | | | |
| Not ac'd for | .... | .... | 5,083 | | | | | | | |
| Officers | .... | .... | 7,122 | | | | | | | |
| | | | 186,017 | | | | | | | |

1. This gives colored troops enlisted in the States in rebellion; besides this, there were 92,576 colored, included (with the white soldiers) in the quotas of the several States; the 3d column gives the aggregate of colored, but many enlisted South were credited to Northern States.

2. This is the aggregate of troops furnished for all periods of service—from 3 months to 3 years time. Reduced to a uniform 3 years' standard, the whole number of troops enlisted was 2,320,272.

3. Virginia and West Virginia populations by census of 1860, as divided by counties in 1863.

## CHRONOLOGICAL HISTORY OF THE UNITED STATES.

1492. America discovered by Christopher Columbus.....Oct. 12.
1497. Labrador discovered by John and Sebastian Cabot.....July 3.
1498. Coast of North America explored by Sebastian Cabot.
Continent of South America discovered by Columbus.....Aug. 10.
1499. South America visited by Amerigo Vespucci.
1512. Florida discovered by Juan Ponce de Leon.....April 6.
1513. The Pacific Ocean discovered by Vasco Nunez de Balboa....Sept. 29.
1520. Carolina visited by Lucas Vasquez de Ayllon.
1521. Mexico conquered by Fernando Cortez.
1524. Coast of North America explored by John Verrazani.
1534. The St. Lawrence River discovered by Jacques Cartier.....June.
1541. The Mississippi River discovered by De Soto.
1562. Colony of Huguenots settled at Port Royal entrance.
1564. Colony of Huguenots settled in Florida.
1565. St. Augustine, Florida, founded by the Spaniards.....Sept. 18.
Huguenot colony in Florida destroyed by the Spaniards.....Oct. 1.
1583. Newfoundland taken possession of by Sir H. Gilbert.
1584. Amidas and Barlow explored the coast of North Carolina.
1585. First attempt to form a settlement at Roanoke, by Sir W. Raleigh.
1587. Second attempt to form a settlement at Roanoke.
1602. Cape Cod discovered by Bartholomew Gosnold.....May 24.
1605. Port Royal, in Nova Scotia, settled by the French.
1606. London and Plymouth Companies received charters.....April 20.
1607. Jamestown settled by the London Company.....May 23.
Plymouth Company began a settlement on Kennebec River, Aug. 21.
1608. Quebec settled by the French, under Champlain.....July 3.
1609. Virginia received its second charter.....June 2.
The Hudson River discovered by Henry Hudson.....Sept. 21.
1610. "The Starving Time" in Virginia.
1612. Virginia received its third charter.....March 22.
1613. Pocahontas married to Rolfe.....April.
1614. The coast of New England explored by John Smith.
New York settled by the Dutch.
1616. The culture of tobacco commenced in Virginia.
1620. Commencement of Negro slavery in the English colonies, Aug.
Charter granted to "The Council of Plymouth,".....Nov. 3.
Massachusetts settled, at Plymouth.....Dec. 21.
1621. Treaty with Massasoit made.....April 1.
1622. First Indian massacre in Virginia.....April 1.
1623. New Hampshire settled, at Little Harbor and Dover.
1633. Connecticut settled, at Windsor.....Oct.
1634. Maryland settled, at St. Mary's.....April 6.
1636. Rhode Island settled, at Providence.
Harvard College founded.
1637. The Pequod War.
1638. Delaware settled, near Wilmington.....April.
1641. New Hampshire settlements united to Massachusetts.
1643. Union of New England colonies formed.....May 29.
1644. Second Indian massacre in Virginia.....April.
1645. Clayborne's Rebellion in Maryland.
1650. North Carolina settled, on the Chowan River.
1651. The "Navigation Act" passed by the British Parliament.
1652. The Maine settlements united to Massachusetts.
1655. Civil War in Maryland.
New Sweden conquered by the Dutch.....Oct.
1663. Carolina granted to Clarendon and others.
1664. New York became an English province.....Sept. 8.
New Jersey settled, at Elizabethtown.
1670. South Carolina settled, on the Ashley River.
1673. Virginia granted to Culpepper and Arlington.

1675. King Philip's War begun, by an attack upon Swanzey.....July 4.
1676. Bacon's Rebellion.
1680. Charleston founded.
New Hampshire made a Royal Province.....Sept. 28.
1682. Pennsylvania settled.
Delaware granted by the Duke of York to William Penn....Aug. 31.
1686. Andros arrived at Boston as Governor of New England.....Dec. 30.
1689. King William's War commenced. Attack upon Dover.....July 7.
1690. Schenectady burned by the French and Indians.....Feb. 8.
Port Royal taken by the English, under Phipps.....May.
1692. "Salem Witchcraft" delusion prevailed.
1697. King William's War terminated.....Sept. 20.
1702. Queen Anne's War commenced.
1710. Port Royal, Nova Scotia, captured by the English.....Oct. 13.
1713. Queen Anne's War terminated.....April 11.
1729. North and South Carolina became separate provinces.....July.
1732. Washington born, in Westmoreland County, Virginia.....Feb. 22.
1733. Georgia settled, at Savannah.....Feb. 12.
1741. "The Negro Plot," in New York.
1744. King George's War begun.
1745. Louisburg captured by the English.....June 28.
1748. King George's War ended.....Oct. 18.
1753. Washington sent with a letter from Dinwiddie.....Oct. 31.
1754. Washington delivered St. Pierre's reply to Dinwiddie.....Dec. 11.
The battle of Great Meadows.....May 28.
Congress of Commissioners met at Albany.....June.
The battle of Fort Necessity.....July 4.
1755. French expelled from Nova Scotia by Moncton.....June.
Braddock's defeat at the battle of Monongahela.....July 9.
The British defeat by Dieskau, near Lake George.....Sept. 8.
Dieskau defeated by the British, at Lake George.....Sept. 8.
1756. Great Britain declared war against France.....May 17.
France declared war against Great Britain.....June 9.
The French, under Montcalm, captured Oswego.....Aug. 14.
Indians defeated at Kittaning.....Sept. 8.
1757. Fort William Henry surrendered to Montcalm.....Aug. 9.
The massacre at Fort William Henry.....Aug. 10.
1758. Lord Howe killed in a skirmish at Ticonderoga.....July 6.
Abercrombie repulsed by Montcalm at Ticonderoga.....July 8.
Louisburg taken by Amherst and Wolfe.....July 26.
Fort Frontenac surrendered to the English.....Aug. 27.
Grant defeated by Aubry, near Fort Duquesne.....Sept. 21.
1759. Ticonderoga and Crown Point abandoned by the French.
Niagara surrendered to the English, under Johnson.....July 25.
Battle of Montmorenci.....July 31.
Battle of the Plains of Abraham.....Sept. 13.
Quebec surrendered to the English.....Sept. 18.
1760. The French attempted the recovery of Quebec.....April 28.
Montreal and the whole of Canada surrendered to the English.Sept. 8.
1763. The Peace of Paris between Great Britain and France.....Feb. 10.
Florida ceded to Great Britain by Spain.....Feb. 10.
1765. The Stamp Act passed by the British Parliament.....March 8.
A Colonial Congress met at New York.....Oct. 7.
1766. The Stamp Act repealed by the British Parliament.....March 18.
1767. A bill imposing duties on glass, paper, &c., passed.....June 29.
1768. A body of British troops arrived at Boston.....Sept. 27.
1770. "The Boston Massacre".....March 5.
All duties, except on tea, repealed by Parliament.....April 12.
1773. The cargoes of tea at Boston thrown overboard.....Dec. 16.
1774. "Boston Port Bill" passed by Parliament.....March.
"The First Continental Congress" met at Philadelphia.....Sept. 5.
1775. The battle of Lexington.....April 19.

1775. Ticonderoga, New York, captured by Allen and Arnold.....May 10.
Crown Point, New York, captured by the Americans.....May 12.
Washington elected commander-in-chief.....June 15.
The battle of Bunker Hill.....June 17.
Washington took command of the army.....July 12.
Montreal surrendered to Montgomery.....Nov. 13.
Battle of Quebec.....Dec. 31.
1776. Norfolk, Virginia, destroyed by Lord Dunmore.....Jan. 1.
Boston evacuated by the British troops.....March 17.
The battle of Fort Moultrie, South Carolina.....June 28.
The Declaration of Independence.....July 4.
The battle of Long Island, New York.....Aug. 27.
The city of New York abandoned by the Americans.....Sept. 15.
The battle of White Plains, New York.....Oct. 28.
The battle of Fort Washington, New York.....Nov. 16.
Fort Lee, New Jersey, taken by the British.....Nov. 18.
Gen. Lee surprised and taken prisoner.....Dec. 13.
The battle of Trenton, New Jersey.....Dec. 26.
1777. The battle of Princeton, New Jersey.....Jan. 3.
Tryon's first expedition against Connecticut.....April.
Meigs's expedition against the British at Sag Harbor.....May 23.
Invasion of New York by Burgoyne.....June.
Ticonderoga abandoned by the Americans.....July 5.
The battle of Hubbardton, Vermont.....July 7.
Gen. Prescott captured by Colonel Barton.....July 10.
Murder of Miss Jane McCrea, near Fort Edward.....July 27.
Fort Schuyler, New York, besieged by St. Leger.....Aug.
The battle of Oriskany, near Fort Schuyler.....Aug. 6.
The battle of Fort Schuyler.....Aug. 6.
The battle of Bennington, Vermont.....Aug. 16.
The battle of Brandywine, Pennsylvania.....Sept. 11.
The battle of Bemis Heights, or first of Stillwater.....Sept. 19.
The battle of Paoli, Pennsylvania.....Sept. 20.
Philadelphia entered by the British.....Sept. 26.
The battle of Germantown, Pennsylvania.....Oct. 4.
Forts Clinton and Montgomery taken by the British.....Oct. 6.
The battle of Saratoga, second of Stillwater.....Oct. 7.
The surrender of Burgoyne.....Oct. 17.
The British repulsed at Fort Mercer, New Jersey.....Oct. 22.
The British repulsed at Fort Mifflin, Pennsylvania.....Oct. 22.
Articles of Confederation adopted by Congress.....Nov. 15.
Fort Mifflin abandoned by the Americans.....Nov. 16.
Washington encamped at Valley Forge, Pennsylvania.....Dec. 11.
1778. American Independence acknowledged by France.....Feb. 6.
Treaty of Alliance with France.....Feb. 6.
British commissioners sent to America.
Philadelphia evacuated by the British.....June 18.
The battle of Monmouth, New Jersey.....June 28.
The battle of Wyoming, Pennsylvania, and massacre.....July 3.
The French fleet, under D'Estaing, arrived.....July 11.
The battle of Rhode Island.....Aug. 29.
Grey's ravaging expedition to the eastward.....Sept.
Ferguson's expedition against Egg Harbor.....Oct.
The massacre at Cherry Valley, New York.....Nov. 11, 12.
The battle of Savannah, Georgia.....Dec. 29.
1779. Sunbury, Georgia, captured by the British.....Jan. 9.
The battle of Kettle Creek, Georgia.....Feb. 14.
The battle of Brier Creek, Georgia.....March 3.
Tryon's second expedition against Connecticut.....March.
Stony Point, New York, captured by the British.....May 31.
Verplanck's Point, New York, captured by the British.....June 1.
War declared against Great Britain by Spain.....June 28.

1779. The battle of Stono Ferry, South Carolina.....June 20.
Tryon's third expedition against Connecticut.....July.
The battle of Stony Point, New York.....July 15.
British garrison at Paulus Hook surprised by Lee.....July 19.
The battle of the Penobscot, Maine.....Aug. 13.
Sullivan's expedition against the Indians.
"The battle of the Chemung," New York.....Aug. 29.
Savannah besieged by the French and Americans.....Sept., Oct.
Paul Jones's naval battle off the coast of England.....Sept. 23.
D'Estaing and Lincoln repulsed at Savannah.....Oct. 9.
1780. Charleston besieged by the British.....April, May.
The battle of Monk's Corner, South Carolina.....April 14.
Charleston surrendered to the British.....May 12.
The battle of Waxhaw, South Carolina.....May 29.
The battle of Springfield, New Jersey.....June 23.
French fleet arrived at Newport, Rhode Island.....July 10.
The battle of Rocky Mount, South Carolina.....July 30.
The battle of Hanging Rock, South Carolina.....Aug. 6.
The battle of Sanders Creek, South Carolina.....Aug. 16.
The battle of Fishing Creek, South Carolina.....Aug. 18.
Arnold's treason.
Andre executed as a spy at Tappan, New York.....Oct. 2.
The battle of King's Mountain, South Carolina.....Oct. 7.
The battle of Fishdam Ford, South Carolina.....Nov. 12.
The battle of Blackstocks, South Carolina.....Nov. 20.
1781. Revolt of the Pennsylvania troops.....Jan. 1.
The battle of the Cowpens, South Carolina.....Jan. 17.
The revolt of New Jersey troops.....Jan. 18.
Arnold's depredation in Virginia.....Jan.
Cornwallis's pursuit of Morgan and Greene.....Jan., Feb.
Articles of Confederation ratified by the States.
The battle of Guilford Court-House, North Carolina.....March 15.
The battle of Hobkirk's Hill, South Carolina.....April 25.
Siege of Ninety-Six by General Greene.....May, June.
The battle of Ninety-Six, South Carolina.....June 18.
Colonel Hayne executed by the British, at Charleston.....July 31.
Arnold's expedition against Connecticut.....Sept.
The battle of Fort Griswold, Connecticut.....Sept. 6.
The battle of Eutaw Springs, South Carolina.....Sept. 8.
The siege of Yorktown, Virginia.....Oct.
The surrender of Cornwallis, at Yorktown.....Oct. 19.
1782. Preliminary articles of peace signed at Paris.....Nov. 30.
1783. Cessation of hostilities proclaimed in the American army.....April 19.
Savannah, Georgia, evacuated by the British.....July 11.
Definitive treaty of peace signed at Paris.....Sept. 3.
American army disbanded by orders of Congress.....Nov. 3.
New York evacuated by the British.....Nov. 25.
Charleston, South Carolina, evacuated by the British.....Dec. 14.
Washington resigns his commission.....Dec. 23.
1787. Shay's Rebellion, in Massachusetts.
Constitution of the United States agreed on by the convention of delegates at Philadelphia.....Sept. 17.
1789. The first Congress under the Constitution met at New York, March 4.
Washington inaugurated President of the United States.....April 30.
1790. Harmar defeated by the Indians, in Indiana.....Oct. 17, 22.
1791. United States bank established at Philadelphia.
Vermont admitted into the Union.....March 4.
St. Clair defeated by the Indians, in Ohio.....Nov. 4.
1792. Kentucky admitted into the Union.....June 1.
1793. The difficulties with France.
1794. Wayne defeated by the Indians, on the Maumee.....Aug. 20.
"Whiskey Insurrection" in Pennsylvania.

1795. "Jay's Treaty" with Great Britain ratified.....June 24.
Treaties with the Western Indians, Spain, and Algiers.
1796. Tennessee admitted into the Union.....June 1.
1797. John Adams inaugurated President of the United States...March 4.
1799. The death of Washington.....Dec. 14.
1800. The seat of government removed to Washington.
Treaty of peace concluded with France.....Sept. 30.
1801. Thomas Jefferson inaugurated President.....March 4.
War declared against the United States by Tripoli.....June 10.
1802. Ohio admitted into the Union.....Nov. 29.
1803. Louisiana purchased of France.....April 30.
Commodore Preble sent against Tripoli.
1804. The frigate Philadelphia destroyed by Decatur.....Feb. 15.
The duel between Hamilton and Burr.....July 11.
1805. Derne, a Tripolitan city, captured by Eaton.....April 27.
Treaty of peace concluded with Tripoli.....June 3.
1806. British blockade from the Elbe to Brest declared.....May 16.
Bonaparte issued his "Berlin Decree".....Nov. 21.
1807. British "Orders in Council" prohibited coast trade with France, Jan. 7.
American frigate Chesapeake attacked by the Leopard.....June 22.
British armed vessels ordered to leave the United States.....July.
British "Orders in Council" prohibited all trade with France and her allies.....Nov. 11.
Aaron Burr tried for treason, and acquitted.....Sept.
Bonaparte issued his "Milan Decree".....Dec. 17.
Embargo on American ships laid by Congress.....Dec. 22.
1809. Commerce with Britain and France interdicted by Congress, March 1.
James Madison inaugurated President.....March 4.
1811. Action between the frigate President and Little Belt.....May 16.
Battle of Tippecanoe, Indiana.....Nov. 7.
1812. Louisiana admitted into the Union.....April 8.
War against Great Britain proclaimed by the United States..June 19.
Invasion of Canada by Gen. Hull.....July 12.
Surrender of Fort Mackinaw, Michigan.....July 17.
The first battle of Brownstown, Michigan.....Aug. 5.
The second battle of Brownstown.....Aug. 9.
Surrender of Detroit, Michigan, by Gen. Hull.....Aug. 16.
British sloop Alert taken by the frigate Essex.....Aug. 13.
British frigate Guerriere taken by the Constitution.....Aug. 19.
The battle of Queenstown, Canada.....Oct. 13.
British brig Frolic taken by the Wasp.....Oct. 18.
British frigate Macedonian taken by the United States.....Oct. 25.
British frigate Java taken by the Constitution.....Dec. 29.
1813. The battle of Frenchtown, Michigan.....Jan. 22.
British brig Peacock taken by the Hornet.....Feb. 24.
Madison commenced a second presidential term.....March 4.
The battle of York, Canada.....April 27.
Fort Meigs, on the Maumee, besieged by Proctor.....May 1.
The battle of Fort Meigs, Ohio.....May 5.
Fort George, Canada, taken by the Americans.....May 27.
The battle of Sackett's Harbor, New York.....May 29.
American frigate Chesapeake taken by the Shannon.....June 1.
The battle of Fort Stephenson, Ohio.....Aug. 2.
American brig Argus taken by the Pelican.....Aug. 14.
Creek War commenced by the massacre at Fort Mims.....Aug. 30.
British brig Boxer taken by the Enterprise.....Sept. 5.
Perry's victory on Lake Erie.....Sept. 10.
The battle of the Thames, Canada.....Oct. 5.
The battle of Chrysler's Field, Canada.....Nov. 11.
1814. The battle of Tohopeka, the last of the Creek War.....March 27.
American frigate Essex taken by the Phœbe and Cherub..March 28.
The battle of La Colle Mill, Canada.....March 30.

1814. British brig Epervier taken by the Peacock.....April 29.
British sloop Reindeer taken by the American sloop Wasp...June 28.
Fort Erie captured by the Americans.....July 3.
The battle of Chippewa, Canada.....July 5.
The battle of Lundy's Lane, or Bridgewater, Canada.....July 25.
The first battle of Fort Erie, Canada.....Aug. 15.
The battle of Bladensburg, Maryland.....Aug. 24.
The city of Washington taken by the British.....Aug. 24.
British sloop Avon taken by the American sloop Wasp.....Sept. 1.
McDonough's victory on Lake Champlain.....Sept. 11.
The battle of Plattsburg, New York.....Sept. 11.
The battle of North Point, Maryland.....Sept. 12.
The battle of Fort McHenry, Maryland.....Sept. 13.
The battle of Fort Bowyer, Alabama.....Sept. 15.
The second battle of Fort Erie, Canada.....Sept. 17.
The British driven from Pensacola by Gen. Jackson.....Nov. 7.
The battle on Lake Borgne, Louisiana.....Dec. 14.
Hartford Convention.....Dec.
The battle nine miles from New Orleans.....Dec. 23.
Treaty of peace between the United States and Gt. Britain...Dec. 24.
1815. The battle of New Orleans.....Jan. 8.
American frigate President captured by a British squadron..Jan. 15.
The Cyanne and Levant taken by the Constitution.....Feb. 20.
The British brig Penguin taken by the Hornet.....March 23.
War with Algiers declared by Congress.....March.
Commodore Decatur sent against Algiers.....May.
1816. Bank of United States re-chartered for twenty years.....April 10.
Indiana admitted into the Union.....Dec. 11.
1817. James Monroe inaugurated President.....March 4.
Mississippi admitted into the Union.....Dec. 10.
The Seminoles and Creeks commenced depredations.
1818. General Jackson went against the hostile Indians.....March.
Pensacola seized by General Jackson.....May 24.
Illinois admitted into the Union.....Dec. 3.
1819. Alabama admitted into the Union.....Dec. 14.
1820. Maine admitted into the Union.....March 15.
Florida ceded to the United States by Spain.....Oct.
1821. Missouri admitted into the Union.....Aug. 10.
1824. Lafayette visited the United States.....Aug.
1825. John Quincy Adams inaugurated President.....March 4.
1826. Death of the two ex-presidents, Adams and Jefferson.....July 4.
1829. Andrew Jackson inaugurated President.....March 4.
1831. Death of ex-president Monroe.....July 4.
1832. "The Black Hawk War."
"Nullification" in South Carolina.
1833. Removal of the government funds from the United States Bank, Oct.
1835. War with the Seminoles commenced.
Gen. Thompson and friends massacred by the Seminoles.....Dec. 28.
Major Dade and party massacred by the Seminoles.....Dec. 28.
1836. Arkansas admitted into the Union.....June 15.
1837. Michigan admitted into the Union.....Jan. 26.
Martin Van Buren inaugurated President.....March 4.
The battle of Okechobee, Florida.....Dec. 25.
1841. William Henry Harrison inaugurated President.....March 4.
Death of William Henry Harrison.....April 4.
John Tyler inaugurated President.....April 6.
1842. The War with the Seminoles terminated.
The "Dorr Rebellion" in Rhode Island.
1845. Joint resolutions for the annexation of Texas signed.....March 1.
James K. Polk inaugurated President.....March 4.
Florida admitted into the Union.....March 3.
Texas admitted into the Union.....Dec. 29.

1846. Thornton's party captured by the Mexicans, Texas ..... April 26.
Fort Brown bombarded by the Mexicans ..... May.
The battle of Palo Alto, Texas ..... May 8.
The battle of Resaca de la Palma, Texas ..... May 9.
Congress declared "war existed by the act of Mexico" ..... May 11.
Taylor crossed the Rio Grande and took Matamoras ..... May 18.
Monterey, Mexico, surrendered to Gen. Taylor ..... Sept. 24.
The battle of Bracito, Mexico ..... Dec. 25.
Iowa admitted into the Union ..... Dec. 28.
1847. The battle of Buena Vista, Mexico ..... Feb. 23.
The battle of Sacramento, Mexico ..... Feb. 28.
The surrender of Vera Cruz to General Scott ..... March 27.
The battle of Cerro Gordo, Mexico ..... April 18.
The battles of Contreras and Churubusco, Mexico ..... Aug. 20.
The battle of Molina del Rey, Mexico ..... Sept. 8.
The battle of Chapultepec, Mexico ..... Sept. 13.
City of Mexico entered by the Americans, under Scott ..... Sept. 14.
The battle of Huamantla, Mexico ..... Oct. 9.
1848. Treaty of peace signed at Gaudaloupe, Hidalgo ..... Feb. 2.
Wisconsin admitted into the Union ..... May 29.
1849. Zachary Taylor inaugurated President ..... March 5.
1850. The death of President Taylor ..... July 9.
Millard Fillmore inaugurated President ..... July 10.
California admitted into the Union ..... Sept. 9.
1853. Franklin Pierce inaugurated President ..... March 4.
1854. "Kansas-Nebraska Bill" passed ..... June.
1857. James Buchanan inaugurated President ..... March 4.
1858. Minnesota admitted into the Union ..... May 11.
1859. Oregon admitted into the Union ..... Feb. 14.
John Brown's raid into Virginia ..... Oct. 16.
1860. Secession Ordinance passed by South Carolina ..... Dec. 20.
1861. Secession of Mississippi, Florida, Alabama, Georgia, Louisiana, Texas, Virginia, Arkansas, and North Carolina declared.
Steamer Star of the West, off Charleston, fired into ..... Jan. 9.
Kansas admitted into the Union ..... Jan. 29.
"Southern Confederacy" formed at Montgomery, Alabama ..... Feb. 4.
Jefferson Davis inaugurated President of the Confederacy ..... Feb. 18.
Abraham Lincoln inaugurated President of the United States, Mar. 4.
Fort Sumter attacked by the Confederates ..... April 12, 13.
President Lincoln calls for 75,000 troops ..... April 15.
Volunteer troops attacked in Baltimore ..... April 19.
The President issues a second call for troops ..... May 4.
Confederate victory at Big Bethel, Virginia ..... June 10.
Union victory at Romney, Virginia ..... June 11.
Union victory at Booneville, Missouri ..... June 17.
Meeting of Congress in extra session ..... July 4.
Battle of Carthage, Missouri ..... July 5.
Battle of Rich Mountain, Virginia ..... July 11.
Battle near Centreville, Virginia ..... July 18.
Confederate Congress meets at Richmond ..... July 20.
Battle of Bull Run, Virginia ..... July 21.
Battle of Dug Spring, Missouri ..... Aug. 2.
Battle of Wilson's Creek, Missouri ..... Aug. 10.
Forts Hatteras and Clark, North Carolina, captured ..... Aug. 29.
Confederates take Lexington, Missouri ..... Sept. 20.
Battle of Edwards' Ferry, or Ball's Bluff, Virginia ..... Oct. 21.
Capture of Port Royal entrance by Union fleet ..... Nov. 7.
Battle of Belmont, Missouri ..... Nov. 7.
Mason and Slidell taken from English steamer ..... Nov. 8.
1862. Battle of Mill Spring, Kentucky ..... Jan. 19.
Fort Henry captured by Union fleet ..... Feb. 6.
Roanoke Island captured by Union forces ..... Feb. 8.

1862. Fort Donelson captured by Union forces.....Feb. 16.
Battle of Pea Ridge, Arkansas.....March 6, 8.
U.S.vessels Congress and Cumberland sunk by the Merrimac. Mar. 8.
Engagement between the Monitor and Merrimac.....March 9.
Newbern, North Carolina, captured by Union troops.....March 14.
Battle at Winchester, Virginia.....March 23.
Battle of Pittsburg Landing, or Shiloh, Tennessee.....April 6, 7.
Capture of Island No. 10, Mississippi River.....April 7.
Fort Pulaski, Georgia, captured by Union fleet.....April 11.
New Orleans captured by Union forces.....April 25.
Battle of Williamsburg, Virginia.....May 5.
Norfolk, Virginia, surrendered to the Unionists.....May 10.
Confederates retreat from Corinth, Mississippi.....May 28, 29.
Battle of Seven Pines, or Fair Oaks.....May 31, June 1.
Memphis, Tennessee, surrendered to the Unionists.....June 6.
Seven days' contest on the Virginia peninsula.....June 25 to July 1.
The President calls for 300,000 more troops.....July 1.
Battle of Cedar Mountain, Virginia.....Aug. 9.
Pope's battles between Manassas and Washington.....Aug. 23, 30.
Battle near Richmond, Kentucky.....Aug. 30.
Invasion of Maryland by Lee's army.....Sept. 5.
Battle of South Mountain, Maryland.....Sept. 14.
Harper's Ferry surrendered to the Confederates.....Sept. 15.
Battle of Antictam, Maryland.....Sept. 17.
Battle of Munfordsville, Kentucky.....Sept. 17.
Battle of Iuka, Mississippi.....Sept. 19.
Battle of Corinth, Mississippi.....Oct. 4.
Battle of Perryville, Kentucky.....Oct. 8.
Battle of Fredericksburg, Virginia.....Dec. 13.
Union repulse at Vicksburg, Mississippi.....Dec. 29.
Battle of Stone River, or Murfreesboro', Tennessee.....Dec. 31.
1863. The President's Emancipation Proclamation issued.....Jan. 1.
Battle of Murfreesboro' resumed and ended.....Jan. 2.
Arkansas Post captured by Union forces.....Jan. 11.
Bombardment of Fort Sumter, South Carolina.....April 7.
Union cavalry raid, under Grierson, in Mississippi.....April.
Battle at Port Gibson, Mississippi.....May 1.
Battle of Chancellorsville, Virginia.....May 2, 3.
Battle of Raymond, Mississippi.....May 12.
Union victory near Jackson, Mississippi.....May 14.
Battle of Champion Hill, Mississippi.....May 16.
Battle at Big Black River, Mississippi.....May 17.
Second invasion of Maryland by Lee's army.....June.
West Virginia admitted into the Union.....June 20.
Battle of Gettysburg, Pennsylvania.....July 1-3.
Vicksburg surrendered by the Confederates.....July 4.
Port Hudson surrendered by the Confederates.....July 8.
Great riot in New York.....July 13-16.
Morgan defeated near Kyger's Creek, Ohio.....July 21.
Morgan captured near New Lisbon, Ohio.....July 26.
Fort Wagner, South Carolina, captured by Union troops.....Sept. 6.
Battle of Chickamauga, Georgia.....Sept. 19, 20.
Knoxville, Tennessee, invested by the Confederates.....Nov. 18.
Union victory at Lookout Mountain, Georgia.....Nov. 24.
Union victory at Missionary Ridge, Georgia.....Nov. 25.
Union victory at Knoxville, Kentucky.....Nov. 29.
1864. The President orders a draft for more men.....Feb. 1.
Battle of Olustee, Florida.....Feb. 20.
Grant created Lieutenant-General.....March 3.
Fort De Russy, Louisiana, captured by Union troops.....March 14.
Battle of Cane River, Louisiana.....March 26.
Battle of Mansfield, or Sabine Cross Roads, Louisiana.....April 8

1864. Battle of Pleasant Hill, Louisiana.....April 9.
Fort Pillow, Tennessee, captured by the Confederates.....April 12
Plymouth, N. C., surrendered to the Confederates.....April 20
Army of the Potomac commenced a forward movement.....May 3.
Battle of the Wilderness, Virginia.....May 5-7.
March from Chattanooga against Atlanta commenced.....May 7
Battles near Spottsylvania Court House, Virginia.....May 7. 12.
Battle of Resaca, Georgia.....May 15.
Battle of Newmarket, Virginia.....May 15.
Army of the Potomac crossed to south side of the James....June 14.
Battle between the Kearsarge and Alabama.....June 19.
Invasion of Maryland by Early's army.....July 5.
Battle of Monocacy, Maryland.....July 9.
The President calls for 500,000 volunteers.....July 18.
Battles before Atlanta, Georgia.....July 20. 22. 28.
Chambersburg, Pennsylvania, sacked and burned.....July 30.
Explosion of mine and Union repulse at Petersburg.....July 30.
Confederates defeated in Mobile Bay, Alabama.....Aug. 5.
Weldon railroad seized by Union troops.....Aug. 18.
Atlanta, Georgia, captured by Union army.....Sept. 2.
Battle of Winchester, Virginia.....Sept. 19.
Battle of Fisher's Hill, Virginia.....Sept. 22.
Battle of Cedar Creek, Virginia.....Oct. 19.
Confederate ram Albemarle destroyed by torpedo.....Oct. 28.
Plymouth, North Carolina, recaptured by Union troops.....Oct. 31.
Nevada admitted into the Union.....Oct. 31.
Battle of Franklin, Tennessee.....Nov. 30.
Battle near Nashville, Tennessee.....Dec. 16.
Savannah, Georgia, captured by Union army.....Dec. 21.
1865. Fort Fisher, North Carolina, captured by Union troops.....Jan. 15.
Constitutional Amendment abolishing slavery passed.....Jan. 31.
Columbia, South Carolina, captured by Union troops.....Feb. 17.
Charleston, South Carolina, captured by Union troops.....Feb. 18.
Wilmington, North Carolina, captured by Union troops.....Feb. 22.
Battle of Bentonville, North Carolina.....March 19, 20.
Battle near Goldsboro', North Carolina.....March 21.
Battle of Fort Steadman, Virginia.....March 25.
Petersburg and Richmond captured.....April 3.
Surrender of Lee's army.....April 9.
Mobile, Alabama, captured by Union forces.....April 13.
President Lincoln assassinated.....April 14.
Andrew Johnson inaugurated President.....April 15.
Surrender of Johnston's army.....April 26.
Jefferson Davis captured in Georgia.....May 10.
Close of the Great Rebellion.
Slavery declared abolished.....Dec. 18.
1867. Nebraska admitted into the Union.....March 1.
Alaska purchased from Russia for $7,200,000.....June 20.
1868. The House of Representatives impeached President Johnson, Feb 24.
The President was declared acquitted.....April 26.
1869. Ulysses S. Grant inaugurated President.....March 4.
1871. The "Alabama Treaty" was concluded.....May 8.
The great fire of Chicago occurred.....Oct. 8, 9, 10.
1876. The Centennial Anniversary of American Independence.
The "World's Fair" in Philadelphia.....May 10 to Nov. 10.
Colorado admitted into the Union.....Aug. 1.
1877. Rutherford B. Hayes inaugurated President.....March 5.
1881. James A. Garfield inaugurated President.....March 4.
" " " shot by Chas. J. Guiteau, at Washington, July 2
" " " died at Long Branch.....Sept. 19
Chester A. Arthur inaugurated President.....Sept. 20

# INTEREST LAWS IN THE UNITED STATES.

| STATE. | Rate per cent. Legal. | Special. | PENALTY OF USURY. |
|---|---|---|---|
| Alabama | 8 | — | Loss of interest. |
| Arizona | 10 | § | None. |
| Arkansas | 6 | 10 | Forfeiture of principal and interest. |
| California | 7 | § | None. |
| Colorado | 10 | § | None. |
| Connecticut | 6 | § | None. |
| Dakota | 7 | 12 | Forfeiture of contract. |
| Delaware | 6 | 6 | Forfeiture of principal. |
| District of Columbia | 6 | 10 | Forfeiture of all interest. |
| Florida | 8 | § | None. |
| Georgia | 7 | 8 | Forfeiture of all interest. |
| Idaho | *10 | 24 | $300, or imprisonment 6 months, or both. |
| Illinois | 6 | 8 | Forfeiture of all the interest. |
| Indiana | 6 | 8 | Forfeiture of the interest over 8 per cent. |
| Iowa | 6 | 10 | Forfeiture of interest, and costs. |
| Kansas | 7 | 12 | Forfeiture of excess over 12 per cent. |
| Kentucky | 6 | 6 | Forfeiture of excess of interest. |
| Louisiana | 5 | 8 | Forfeiture of interest. |
| Maine | 6 | § | None. |
| Maryland | 6 | 6 | Forfeiture of excess. |
| Massachusetts | 6 | § | None. (Six per cent. on judgments.) |
| Michigan | 7 | 10 | Forfeiture of excess. [cent. is charged. |
| Minnesota | 7 | 10 | Forfeiture of contract if more than 10 per |
| Mississippi | 6 | 10 | Forfeiture of all interest. |
| Missouri | 6 | 10 | Forfeiture of all interest. |
| Montana | 10 | § | None. |
| Nebraska | 7 | 10 | Forfeiture of all interest, and costs. |
| Nevada | 10 | § | None. [ceived. |
| New Hampshire | 6 | 6 | Forfeiture of three times the interest re- |
| New Jersey | 6 | 6 | Forfeiture of all interest, and costs. |
| New Mexico | 6 | § | None. [imprisonment. |
| New York | 6 | ‖ | Forfeiture of contract, $1000 fine, 6 months |
| North Carolina | 6 | 8 | Forfeiture of interest. |
| Ohio | 6 | 8 | Forfeiture of excess. |
| Oregon | 10 | 12 | Forfeiture of interest, principal, and costs |
| Pennsylvania | 6 | 6 | Forfeiture of excess. Act May 28, 1858. |
| Rhode Island | †6 | § | Forfeiture, unless a greater rate is con- |
| South Carolina | 7 | 7 | Forfeiture of all the interest. [tracted. |
| Tennessee | 6 | 6 | Forfeiture of excess over 6 per cent. |
| Texas | 8 | 12 | Forfeiture of all interest. |
| Utah | 10 | § | None. |
| Vermont | 6 | 6 | Forfeiture of excess. |
| Virginia | 6 | § | None. |
| Washington Territory | 10 | § | None. |
| West Virginia | 6 | 6 | Forfeiture of excess. |
| Wisconsin | 7 | 10 | Forfeiture of all the interest. |
| Wyoming | 12 | § | None. |

* Usurers liable to arrest for misdemeanor. ‡ On railroad bonds only.
† Rate on judgments unless otherwise expressed. § No limit.
‖ No corporation can plead usury.

## STATE LAWS WITH REFERENCE TO LIMITATION OF ACTIONS,

SHOWING THE LIMIT OF TIME ON WHICH ACTION MAY BE BROUGHT.

| States and Territories. | Assault, slander, replevin. | Open accounts. | Notes. | Judgments. | Sealed instruments. |
|---|---|---|---|---|---|
| | Years. | Years. | Years. | Years. | Years. |
| Alabama | 1 | 3 | 6 | 20 | 10 |
| Arizona | – | 2 | 4 | 5 | — |
| Arkansas | 1 | 3 | 5 | 10 | 10 |
| California | 3 | 2 | 4 | 5 | 5 |
| Colorado | 1 | 2 | 6 | 6 | 6 |
| Connecticut | 1 | 6 | 6 | 6 | 17 |
| Dakota | 2 | 6 | 6 | 20 | 20 |
| Delaware | 1 | 3 | 6 | 20 | 20 |
| District of Columbia | 1 | 3 | 3 | 12 | 12 |
| Florida | 2 | 5 | 5 | 20 | 20 |
| Georgia | 1 | 4 | 6 | 7 | 20 |
| Idaho | 3 | 2 | 4 | 5 | 5 |
| Illinois | 1 | 5 | 10 | 20 | 10 |
| Indiana | 2 | 6 | 20 | 20 | 20 |
| Iowa | 2 | 5 | 10 | 20 | 10 |
| Kansas | 1 | 3 | 5 | 5 | 15 |
| Kentucky | 1 | 5 | 5 | 15 | 15 |
| Louisiana | 1 | 3 | 5 | 10 | 20 |
| Maine | 2 | 6 | 20 | 20 | 20 |
| Maryland | 3 | 3 | 3 | 12 | 12 |
| Massachusetts | 2 | 6 | 20 | 20 | 20 |
| Michigan | 2 | 6 | 6 | 10 | 10 |
| Minnesota | 2 | 6 | 6 | 10 | 6 |
| Mississippi | 1 | 3 | 6 | 7 | 7 |
| Missouri | 1 | 5 | 10 | 20 | 10 |
| Montana | 2 | 2 | 4 | 5 | 4 |
| Nebraska | 2 | 4 | 5 | 20 | 10 |
| Nevada | 2, 6 | 6 | 20 | 20 | 20 |
| New Hampshire | 1 | 6 | 6 | 20 | 20 |
| New Jersey | 2 | 6 | 6 | 20 | 20 |
| New Mexico | 1 | 4 | 6 | 10 | 15 |
| New York | 1 | 6 | 6 | 20 | 20 |
| North Carolina | 1 | 3 | 10 | 10 | 10 |
| Ohio | 1 | 6 | 15 | 15 | 15 |
| Oregon | 2 | 1 | 6 | 10 | 10 |
| Pennsylvania | 1 | 6 | 6 | 20 | 20 |
| Rhode Island | 1 | 6 | 6 | 20 | 20 |
| South Carolina | 2 | 6 | 6 | 20 | 20 |
| Tennessee | 1 | 6 | 6 | 10 | — |
| Texas | 1 | 2 | 4 | 10 | 10 |
| Utah | 1 | 2 | 4 | 5 | 7 |
| Vermont | 2 | 6 | 14 | 8 | 8 |
| Virginia | 5 | 5 | 5 | 10 | 20 |
| Washington Territory | 2 | 3 | 6 | 6 | 20 |
| West Virginia | 5 | 5 | 10 | 10 | 10 |
| Wisconsin | 2 | 6 | 6 | 20 | 20 |
| Wyoming | 1 | 4 | 5 | 10 | 21 |

NOTE.—A statute of limitation begins to run from the time at which a creditor is authorized first to commence suit. Upon mutual, concurrent, and open accounts, the statute, in general, begins to run with the date of the last item. A debt otherwise barred may generally by revived by a new promise made within the period of limitation. The new promise may be either express, or implied from a part payment, or any unqualified acknowledgment, from which a promise may be inferred.

## INSOLVENT, ASSIGNMENT, AND HOMESTEAD LAWS OF THE DIFFERENT STATES OF THE UNION.

SINCE the repeal of the United States Bankrupt Law, the laws of the different States respecting insolvency, assignments for the benefit of creditors, exemptions of property from liability for debts, and attachments of property upon mesne process have become of general interest. A short epitome of them is here presented. The following are some of the general rules governing these matters: A discharge in insolvency does not affect the rights of a creditor who is not within the jurisdiction of the State where the discharge is granted, and does not submit himself to that jurisdiction by proving his claim against the estate of the debtor. In the absence of statutes, assignments of property for the benefit of creditors are valid, even though they provide for preferences, and for the release of the debtor by creditors taking the benefit of them. An involuntary assignment, under the laws of one State, of choses in action and other property, in another, is not good against attaching creditors in the second State. A voluntary assignment will not prevail against a prior attachment, nor against a subsequent attachment, unless the assignment is valid under, and executed with the formalities required by, the laws of the State where the property is attached.

**ALABAMA.**—No insolvent law. Assignments regulated by statute, which forbids preferences, or any provision for the release of the debtor. Attachments issue against a defendant who is a non-resident, or absconds, or removes his property from the State, or is guilty of fraud, &c. A bond is required of plaintiff. **Real Estate Exemption**—80 acres and house in country, or lot and dwelling to value of $2000 in city. **Personal Property Exemption**—To amount of $1000.

**ARIZONA.**—No insolvent or assignment law. Attachments issue in actions upon contract for direct payment of money where plaintiff has no security, or when defendant is a non-resident, &c. The plaintiff must give bond. **Real Estate Exemption**—Land and House to value of $5000. **Personal Property Exemption**—$150 library; $600 household goods; $600 tools, stock in trade, &c.

**ARKANSAS.**—No insolvent law. Assignments regulated by statute, which forbids preferences. Attachments issue against a defendant who is a non-resident, about to leave the State, avoids service of process, conceals property, or is guilty of fraud, &c. **Real Estate Exemption**—160 acres in country; or city lot, with improvements to value of $2500. **Personal Property Exemption**—Unmarried person—specified articles $200; also, wearing apparel. Married person—specified articles $500; also, wearing apparel.

**CALIFORNIA.**—An insolvent law by which a debtor surrendering his property may receive a discharge from his debts. No preferences permitted. No discharge in case of fraud, nor from debts due as a depositary of funds received as banker, broker, or commission merchant. Assignments not allowed, unless under this law. Attachments when defendant is a non-resident, or in an action upon contract for direct payment of money, where plaintiff has no security, the plaintiff giving bond. **Real Estate Exemption**—Homestead to value of $5000. **Personal Property Exemption**—$200 library, &c.; $200 household goods, &c.; $2000 miner's cabin, and tools, claims, sluices, &c.; and a multitude of special articles.

**COLORADO.**—No insolvent or assignment law. Attachments (plaintiffs giving bond) when defendant is non-resident, or conceals himself, or stands in defiance of officer, or in case of fraud, &c. **Real Estate Exemption**—Homestead to value of $2000. **Personal Property Exemption**—Married person—$100 household goods; $200 tools in trade; $300 library; $200 working animals; $50 farming implements. Unmarried person—$300 tools, stock in trade, &c.

**CONNECTICUT.**—Insolvent law, with compulsory proceedings, which may be taken by creditor to amount of $100. Property put into hands of

trustee. Discharge from debts proved, upon payment of seventy per cent. Debtor's property exempt for two years from legal process upon debts which might have been proved. Assignments must be administered under this law. Attachments on mesne process, in all cases. **Real Estate Exemption**—There is no real estate exemption. **Personal Property Exemption**—$150 household goods, cattle, &c.; $250 horse, buggy, family stores, to specified amount; $500 library of physician or surgeon; $200 boat used in fishing.

**DAKOTA.**—No insolvent law. Assignments without preferences allowed, but are void against any creditor not assenting thereto, if they tend to coerce the creditor to release his claim, or provide for payment of fraudulent claim, or reserve any benefit to assignor, or confer any power upon assignee, which may delay the conversion of the assigned property, or exempt the assignee from liability from neglect of duty, &c. Attachments (plaintiff giving bond) when defendant is non-resident, absconds, conceals or conveys property in fraud of creditors, &c. **Real Estate Exemption**—Homestead, 160 acres; or lot or plot of ground actually occupied in town. **Personal Property Exemption**—$1500, books, wearing apparel, &c.

**DELAWARE.**—No insolvent law. Assignments governed by the common law, except that a special partnership may not give preferences. Attachments (plaintiff giving bond) when defendant has fraudulently left the State, &c. **Real Estate Exemption**—No real estate exemption. **Personal Property Exemption**—Married person, $275 tools and fixtures. Unmarried person, $75 tools and fixtures.

**DISTRICT OF COLUMBIA.**—No insolvent or assignment laws, except that assignments of the property of a special partnership, with preferences, are void. Attachments (plaintiff giving bond) when the defendant is non-resident, or removes or is about to remove his property, &c. **Real Estate Exemption**—No real estate exemption. **Personal Property Exemption**—$300 wearing apparel and furniture; $200 tools and implements of trade; stock to same amount; $300 library and implements of professional man or artist; $100 farmer's team, &c.; $400 library and family pictures.

**FLORIDA.**—No insolvent or assignment law. Attachments (plaintiff giving bond) when defendant is non-resident, or about to part with his property fraudulently, or remove from the State, or fraudulently secretes property, &c. **Real Estate Exemption**—Homestead 160 acres land and improvements in country, or half an acre in village or city. **Personal Property Exemption**—$1000 personal property.

**GEORGIA.**—No insolvent law. Assignments regulated by statute, which forbids preferences, or making a release of the debtor a condition precedent to receipt of dividends. Attachments (the plaintiff giving bond) when the defendant is non-resident, absconds, conceals himself, resists a legal arrest, removes or is about to remove his property, or fraudulently disposes of the same. **Real Estate Exemption**—Married person, guardian, aged or infirm person, or any person having care of dependent. Female who is not the head of family is entitled to amount of realty or personality, or both, to the value of $1600 in the aggregate.

**IDAHO.**—Insolvent law, under which the debtor is discharged upon making an assignment, as therein provided, except in cases of fraud. Attachments (plaintiff giving bond) in actions upon contract for the direct payment of money, when the plaintiff has no lien or security, or when the defendant is a non-resident, &c. **Real Estate Exemption**—No real estate exemption. **Personal Property Exemption**—$100 library, tables, desks, &c.; $200 grain, seed, or vegetables, mechanics' tools, physicians' or surgeons' instruments, actors' wardrobes, &c., miners' tools and implements, cartmen's specified horses and wagons.

**ILLINOIS.**—No insolvent law. Assignments, without preference, allowed and regulated by statute. Attachments (plaintiff giving bond) when the defendant is non-resident, absconds, conceals himself or his property, is guilty of fraud, &c. **Real Estate Exemption**—Lot of ground and buildings, value $1000, to head of family. **Personal Property Exemption**—Un-

married person, books, pictures, wearing apparel, and $100 other property. Married person books, &c., $300 other property.

**INDIANA.**—No insolvent law. Assignments, without preferences or provision for release of debtor, allowed and regulated by statute. Attachments substantially same as in Illinois. **Real Estate Exemption**—$300 real or personal, or both.

**IOWA.**—No insolvent law. Assignments, without preferences, allowed and regulated by statute. Attachments substantially same as in Illinois **Real Estate Exemption**—$500 homestead of 40 acres in country, or half an acre in town. **Personal Property Exemption**—$200 household furniture also, wearing apparel, library, tools, &c.; $75 wearing apparel and selected property to unmarried person.

**KANSAS.**—No insolvent law. Assignments, without preference, allowed and regulated by statute. Attachments substantially same as in Illinois. **Real Estate Exemption**—160 acres land; or one acre in town or city, with improvements. **Personal Property Exemption**—$500 household furniture, wearing apparel, &c.; $300 stock and farming utensils; $400 library and implements of professional man.

**KENTUCKY.**—No insolvent law. Assignments regulated by statute. Any preference may be set aside in six months. Attachments substantially as in Illinois. **Real Estate Exemption**—$1000 house and land. **Personal Property Exemption**—$100 household furniture; $500 library and implements of professional man; $100 mechanics' tools.

**LOUISIANA.**—Insolvent law, with compulsory proceedings by a judgment creditor, upon return of the execution "no property found." The debtor makes a surrender to the creditors, and may be discharged by the consent of a majority of creditors in number and amount, except in case fraud or preference is proved. Assignments, without preference, may be made without regard to the insolvent law. Attachments substantially as in Illinois. **Real Estate Exemption**—160 acres land, with improvements, and personal property; value in all $2000.

**MAINE.**—Insolvent law, passed in 1878, modeled on the United States Bankrupt Law. Voluntary petition may be filed by debtor owing $300. Involuntary proceedings by at least two creditors, having one fourth in amount of the provable debts. Debtors owing less than $300 may make an assignment in a summary manner. No percentage is required to be paid to entitle a debtor, for the first time insolvent, to discharge. Attachments within four months from date of filing petition dissolved. Preferences given within two months void, and may be recovered by assignee. Assignments are probably acts of insolvency, and may be set aside by the assignee in insolvency, if made within four months of the filing of the petition. Otherwise, probably good, if without preferences. Attachments on mesne process in all cases. **Real Estate Exemption**—$500 in land and dwelling. **Personal Property Exemption**—$50 furniture; $100 sewing-machine; $150 library; $350 animals, clothing, tools, &c.

**MARYLAND.**—Insolvent law, under which the debtor is discharged upon surrender of his property, except where fraud or preference is proved. Assignments subject to rules of common law. Attachments (plaintiff giving bond) when defendant is non-resident, and in cases of fraud, &c. **Real Estate Exemption**—No real estate exempted. **Personal Property Exemption**—$100 in selected property; also, tools and wearing apparel.

**MASSACHUSETTS.**—Insolvent law, similar to the United States Bankrupt Law. Proceedings generally the same, except that involuntary petition may be filed by one creditor, and the acts of insolvency are not so numerous. Discharge upon payment of fifty per cent, or by consent of a majority of number and value of creditors. None in case of fraud or preference. Assignments are acts of insolvency, but good if not avoided by assignee in insolvency. Attachments on mesne process, in all cases. **Real Estate Exemption**—$800 farm, or lot of land and buildings. **Personal Property Exemption**—$720 household furniture, stock, library, provisions, &c.

**MICHIGAN.**—Insolvent law, by which a debtor, with the consent of two thirds of his creditors, and upon surrendering his property, may be discharged. Assignments allowed. Attachments (plaintiff giving bond) issue when defendant is a non-resident, or is guilty of fraud, &c. **Real Estate Exemption**—40 acres of land in country; or one lot in city, with dwelling, $1500. **Personal Property Exemption**—$250 household furniture; $150 library; sheep, cows, &c., to householder, in addition.

**MINNESOTA.**—No insolvent law. Assignments, without preference, allowed and regulated by statute. Attachments (plaintiff giving bond) when defendant is non-resident, conceals his property, is guilty of fraud, &c. **Real Estate Exemption**—80 acres land, or lot and dwelling in city, or village of more than 5,000 inhabitants; and half an acre in town of less than 5,000. **Personal Property Exemption**—$500 household articles; $300 farming utensils; $400 mechanics' tools, stock, and provisions; library and implements of professional man.

**MISSISSIPPI.**—No insolvent law. Assignments not requiring a release of the debtor allowed. Attachments (plaintiff giving bond) when defendant is non-resident, conceals property, or is guilty of fraud, &c. **Real Estate Exemption**—80 acres land to any householder; $2000 worth of real property in incorporated town. **Personal Property Exemption**—$250 furniture; library, wearing apparel, tools, and implements.

**MISSOURI.**—No insolvent law. Assignments, without preference, allowed and regulated by statute. Attachments (plaintiff giving bond) when defendant is non-resident, conceals himself or property, or is guilty of fraud. **Real Estate Exemption**—160 acres land to married man, to value of $1500; 18 square rods, value $3,000, in city of 40,000 or over; 30 square rods, value $1500, in city of less size. **Personal Property Exemption**—$300 personal property to head of family.

**MONTANA.**—No insolvent or assignment laws. Attachments in actions upon contracts to pay money, the plaintiff giving bond in double the value of property attached; also before debt due, if debtor fraudulently disposes of his property to defraud his creditors. **Real Estate Exemption**—160 acres land and dwelling in country; or half an acre, with buildings, $2000 value, in city; or 20 acres in city, value $2000. **Personal Property Exemption**—$500 personal property; $100 household furniture; $50 farming implements, library, tools, &c.

**NEBRASKA.**—No insolvent law. Assignments, without preference, allowed and regulated by a recent statute (1877). Attachments (plaintiff giving bond) when defendant is non-resident, or conceals property, or is guilty of fraud, &c.

**NEVADA.**—Insolvent law. No percentage or consent required for discharge, which is only from debts mentioned in debtor's schedules. None, if fraud or preference, &c. Assignments forbidden. Attachments (plaintiff giving bond) in actions upon contract for direct payment of money, where plaintiff has no security. **Real Estate Exemption**—$5,000 homestead. **Personal Property Exemption**—$100 office furniture and library; $400 household furniture, seed, and stock; $500 miner's cabin; $500 miner's tools; $150 sewing-machine.

**NEW HAMPSHIRE.**—No insolvent law. Assignments, without preference or provision for release of debtor, allowed and regulated by statute. Attachments on mesne process, in all cases.

**NEW JERSEY.**—No proper insolvent law. Assignment law, by which the debtor is discharged from the debt proved under assignment, except where the debtor is guilty of fraud or concealment, &c. Attachments when defendant is non-resident or absconds from his creditors. **Real Estate Exemtion**—No real estate exemption. **Personal Property Exemption**—$200 personal by head of family, or $200 personal by widow of deceased.

**NEW MEXICO.**—No insolvency or assignment laws. Attachments substantially as in Illinois. **Real Estate Exemption**—$1000 homestead to head of family. **Personal Property Exemption**—$25 provisions; $10 furniture; $25 tools and implements.

**NEW YORK.**—Insolvent law, under which the debtor surrendering his property is discharged by consent of the persons representing two thirds of the debts. No discharge if fraud or preference is proved. No involuntary proceedings unless the debtor is imprisoned. Assignments and the duties of assignees have been regulated by recent acts (1877 and 1878). Attachments substantially as in Illinois. Real Estate Exemption—$1000 homestead for family. Personal Property Exemption—$250 household furniture, &c.

**NORTH CAROLINA.**—A law by which, upon surrendering his property, the person of the debtor is free from liability to arrest or imprisonment, except when fraud is proved; but the debt is not discharged. Assignments allowed. Attachments substantially as in Illinois. Real Estate Exemption—$1000 homestead. Personal Property Exemption—$500 personal to non-owner of homestead; $100 tools, &c.

**OHIO.**—A law similar to that of North Carolina. Assignments, without preference, allowed and regulated by statute. Attachments substantially as in Illinois.

**OREGON.**—Attachments (plaintiff giving bond) upon all contracts, payment of which is unsecured. Voluntary assignment law dissolves attachments, if made at any time before judgment, distributes assets *pro rata* among all creditors presenting claims within three months. Real Estate Exemption—No real estate exemption. Personal Property Exemption—$75 library, &c.; $100 wearing apparel; if householder, $50 each member; $400 tools, implements, &c.; $300 household furniture and stock, to householder.

**PENNSYLVANIA.**—Law similar to that of North Carolina. Assignments, without preference, allowed and regulated by statute. Attachments substantially as in Illinois. Real Estate Exemption—$300 real or personal.

**RHODE ISLAND.**—No insolvent law. Assignments allowed, and regulated by a recent statute, which took effect September, 1878. Attachments, or levies, within sixty days after the same are made or commenced, may be dissolved by an assignment, without preferences, under the act. Upon the giving of a preference by the debtor, any three creditors, holding not less than one third of the debts, may petition the Supreme Court in Equity for the appointment of a receiver of his estate, who is to take possession like an assignee in bankruptcy. Preferences given by the debtor within sixty days of the commencement of proceedings are void, as under the United States Bankrupt Law. There is no provision for the discharge of the debtor. Attachments, when defendant is non-resident, or fraudulently contracted the debt, or conceals or disposes of his property, or has refused to apply his property to the payment thereof. Real Estate Exemption—No real estate exemption. Personal Property Exemption—$300 household furniture, &c.; $200 tools, implements, &c.

**SOUTH CAROLINA.**—No insolvent law. Assignments according to common law. Attachments substantially as in Illinois. Real Estate Exemption—$1000 homestead to head of family. Personal Property Exemption—$500 household furniture, tools, &c.

**TENNESSEE.**—Law as to insolvency and assignments same as in South Carolina. Attachments substantially as in Illinois. Real Estate Exemption—$1000 homestead. Personal Property Exemption—$200 of lumber or product to mechanic; various household articles and stock specified.

**TEXAS.**—Law as to insolvency and assignments same as in South Carolina. Attachments substantially as in Illinois. Real Estate Exemption—200 acres and dwelling in country, or lots in city, value $5000. Personal Property Exemption—Library, tools, wearing apparel, &c.

**UTAH.**—Law as to insolvency and assignments same as in South Carolina. Attachments (when plaintiff has no security) substantially as in Illinois. Real Estate Exemption—$1000 homestead. Personal Property Exemption—$100 office furniture; $100 seed; $400 mechanics' tools or professional library; $200 cash each member of family; also various articles.

**VERMONT.**—Insolvent law of 1876, modeled on the United States Bankrupt Law, with involuntary proceedings by one creditor to amount of $250.

No discharge, unless assets equal thirty per cent of debts, or by consent of majority in number and amount of debts proved. No discharge also in substantially same cases as in Bankrupt Law. Assignments appear to be acts of insolvency, which may be set aside by an assignee in insolvency, if made within four months of filing his petition. Attachments on mesne process, in all cases. Real Estate Exemption—$500 homestead. Personal Property Exemption—$200 library professional man; $200 cattle; $250 wagons, harness, &c.

VIRGINIA.—No insolvent or assignment laws. Attachments substantially as in Illinois. Real Estate Exemption—$2000 real or personal.

WASHINGTON TERRITORY.—Law as to insolvency and assignments same as Virginia. Attachments substantially as in Illinois. Real Estate Exemption—$1000 homestead. Personal Property Exemption—$150 household furniture; $200 farming utensils; $500 mechanic's tools or materials; $500 professional library or instruments; $200 office furniture; $300 teamster's wagon, &c.; $200 boats, &c.

WEST VIRGINIA.—No insolvent law. Assignments regulated by statute, preferences being allowed. Attachments same as in Virginia. Real Estate Exemption—$1000 homestead. Personal Property Exemption—$200 personal; $50 mechanic's tools.

WISCONSIN.—Insolvent law, by which a debtor is discharged upon surrendering property and complying with law. Assignments, with preferences, unless by limited partnerships, allowed and regulated by statute. Attachments substantially as in Illinois. Real Estate Exemption—40 acres land and dwelling in country, or one fourth acre and dwelling in city or village. Personal Property Exemption—$200 household furniture; $50 farming utensils; $200 tools and implements; $1500 printing-press and material.

WYOMING.—No assignment or insolvent laws. Attachments substantially as in Illinois. Real Estate Exemption—$1500 homestead. Personal Property Exemption—$150 wearing apparel; $500 household property; $300 tools, teams, &c.

## SUMMER HEAT IN VARIOUS COUNTRIES.

The following figures show the extreme summer heat in the various countries of the world:—

Bengal and the African desert, 150° Fahrenheit; Senegal and Gaudaloupe, 130°; Persia, 125°; Calcutta and Central America, 120°; Afghanistan and the Arabian desert, 110°; Cape of Good Hope and Utah, 105°; Greece, 104°; Arabia, 103°; Montreal, 103°; New York, 102°; Spain, India, China, and Jamaica, 100°; Sierra Leone, 94°; France, Denmark, St. Petersburg, Shanghai, the Burman Empire, Buenos Ayres, and the Sandwich Islands, 90°; Great Britain, Siam, and Peru, 85°; Portugal, Pekin, and Natal, 80°; Siberia, 77°; Australia and Scotland, 75°; Italy, Venezuela, and Madeira, 73°; Prussia and New Zealand, 70°; Switzerland and Hungary, 66°; Bavaria, Sweden, Tasmania, and Moscow, 65°; Patagonia and the Falkland Isles, 55°; Iceland, 45°. Nova Zembla, 34°.

## AMERICAN WARS.

| | | | |
|---|---|---|---|
| King Philip's War | 1675 | Tecumseh War | 1804 |
| King William's War | 1689 | War of 1812 | 1812 |
| Dutch War | 1673 | Algerine War | 1815 |
| Queen Anne's War | 1744 | First Seminole War | 1817 |
| French and Indian War | 1753 | Second Seminole War | 1835 |
| American Revolution | 1775 | Mexican War | 1846 |
| Indian War | 1790 | The Southern Rebellion | 1861 |
| Barbary War | 1803 | | |

# VALUE OF FOREIGN GOLD AND SILVER COINS IN UNITED STATES MONEY.

## GOLD COINS.

| Country. | Denomination. | Value gold. | Country. | Denomination. | Value gold. |
|---|---|---|---|---|---|
| Australia | Pound of 1852 | $5.32 | Italy | Twenty lire | $3.84 |
| Do. | Sovereign, 1855 | 4.86 | Japan | Old cobang | 4.44 |
| Austria | Ducat | 2.28 | Do. | New cobang | 3.58 |
| Do. | Sovereign | 6.75 | Mexico | Doubloon | 15.61 |
| Do. | Union Crown | 6.64 | Naples | Six ducati | 5.04 |
| Belgium | Twenty-five fr's | 4.72 | Netherlands | Ten guilders | 4.00 |
| Bolivia | Doubloon | 15.59 | New Granada | Bogota doubl'n | 15.61 |
| Brazil | Twenty milreis | 10.91 | Do. | Popayan doub'n | 15.38 |
| Cent'l America | Two escudos | 3.69 | Do. | Ten pesos | 9.68 |
| Chili | Old doubloon | 15.59 | Peru | Old doubloon | 15.56 |
| Do. | Ten pesos | 9.15 | Portugal | Gold crown | 5.81 |
| Denmark | Ten thaler | 7.90 | Prussia | Union crown | 6.64 |
| Ecuador | Four escudos | 7.55 | Rome | 2½ scudi | 2.60 |
| England | Pound, sover'gn | 4.86 | Russia | Five roubles | 3.98 |
| France | Napoleon, 20 frs. | 3.86 | Spain | 100 reals | 4.96 |
| Germany, north | Ten thaler | 7.90 | Do. | 80 reals | 3.86 |
| Do. | Ten thaler, Pr'n | 7.97 | Sweden | Ducat | 2.24 |
| Do. | Krone (crown) | 6.64 | Tunis | 25 piastres | 3.00 |
| Do. south | Ducat | 2.28 | Turkey | 100 piastres | 4.37 |
| Greece | Twenty drachm | 3.44 | Tuscany | Sequin | 2.31 |
| Hindostan | Mohur | 7.08 | | | |

## SILVER COINS.

| Country. | Denomination. | Value silver | Country. | Denomination. | Value silver |
|---|---|---|---|---|---|
| Austria | Old rix dollar | $1.02 | Japan | Itzebu | $0.38 |
| Do. | Old scudo | 1.03 | Do. | New itzebu | .34 |
| Do. | Florin bef. 1858 | .51 | Mexico | Dollar, new | 1.07 |
| Do. | Union dollar | .73 | Naples | Scudo | .95 |
| Belgium | Five francs | .98 | Netherlands | 2½ guilders | 1.03 |
| Bolivia | New dollar | .79 | Norway | Specie daler | 1.11 |
| Do. | Half dollar | .39 | New Granada | Dollar of 1857 | .98 |
| Brazil | Double milreis | 1.03 | Peru | Old dollar | 1.06 |
| Canada | Twenty cents | .19 | Do. | Dollar of 1858 | .95 |
| Cent'l America | Dollar | 1.00 | Do. | Half dollar, 1835 | .38 |
| Chili | Old dollar | 1.07 | Prussia | Thaler bef. 1857 | .73 |
| Do | New dollar | .98 | Do. | New thaler | .73 |
| Denmark | Two rigsdaler | 1.11 | Rome | Scudo | 1.06 |
| England | Shilling | .23 | Russia | Rouble | .79 |
| France | Five francs | .98 | Sardinia | Five lire | .98 |
| Germany, north | Thaler bef. 1857 | .73 | Spain | New pistareen | 1.20 |
| Do. | New thaler | .73 | Sweden | Rix dollar | 1.11 |
| Do. south | Florin bef. 1857 | .42 | Switzerland | Two francs | .46 |
| Do. | New florin | .42 | Tunis | Five piastres | .64 |
| Greece | Five drachms | .48 | Turkey | 20 piastres | .87 |
| Hindostan | Rupee | .47 | Tuscany | Florin | .28 |

## POPULATION OF THE PRINCIPAL CITIES AND TOWNS IN THE UNITED STATES.

TO WHICH IS ADDED THE DEBT OF EACH CITY, AS FAR AS ASCERTAINED.

NOTE.—The "net debt" of cities is the aggregate funded and floating indebtedness, less amounts in sinking funds.

| | Population. 1880. | Net debt. Dollars. |
|---|---|---|
| **Alabama.** | | |
| Huntsville | 4,977 | 46,800 |
| Mobile | 31,205 | 2,671,100 |
| Montgomery | 16,714 | 567,900 |
| Selma | 7,529 | 323,600 |
| **Arkansas.** | | |
| Little Rock | 13,185 | 335,243 |
| **California.** | | |
| Los Angelos | 11,311 | 310,177 |
| Oakland | 34,556 | 669,126 |
| Sacramento | 21,420 | 861,000 |
| San Francisco | 233,956 | 3,059,285 |
| San Jose | 12,567 | None. |
| Stockton | 10,287 | 385,615 |
| **Colorado.** | | |
| Denver | 35,630 | 20,000 |
| Leadville | 14,820 | ..... |
| **Connecticut.** | | |
| Bridgeport | 29,148 | 831,000 |
| Danbury | 11,669 | 255,415 |
| Derby | 11,649 | 80,243 |
| Greenwich | 7,892 | 183,307 |
| Hartford | 42,553 | 3,689,855 |
| Meriden | 18,340 | 788,317 |
| Middletown | 11,731 | ..... |
| New Britain | 13,978 | 494,843 |
| New Haven | 62,882 | 1,359,619 |
| New London | 10,529 | 496,611 |
| Norwalk | 13,956 | 522,495 |
| Norwich | 21,141 | 1,191,256 |
| Stamford | 11,298 | 165,000 |
| Waterbury | 20,269 | 361,508 |
| Windham | 8,265 | 44,193 |
| **Delaware.** | | |
| Wilmington | 42,499 | 1,372,450 |
| **Dist. Columbia.** | | |
| Georgetown | 12,578 | ..... |
| Washington | 147,307 | 23,310,146 |
| **Florida.** | | |
| Jacksonville | ..... | 270,916 |
| Key West | 9,890 | 10,000 |
| **Georgia.** | | |
| Atlanta | 37,421 | 2,180,000 |
| Athens | 6,096 | 107,950 |
| Augusta | 23 023 | 1,961,319 |
| Columbus | 6,152 | 540,800 |
| Macon | 12,748 | 743,000 |
| Savannah | 30,681 | 3,425,000 |
| **Illinois.** | | |
| Alton | 9,851 | 110,491 |
| Aurora | 11,825 | 25,506 |
| **Illinois (contin'd)** | | |
| Belleville | 10,682 | 217,712 |
| Bloomington | 17,184 | 221,463 |
| Cairo | 9,012 | 270,000 |
| Chicago | 503,304 | 12,794,271 |
| Decatur | 9,548 | 80,075 |
| East St. Louis | 9,185 | 272,800 |
| Elgin | 8,789 | 34,336 |
| Freeport | 8,516 | 69,220 |
| Galena | 6,453 | 147,076 |
| Galesburg | 11,446 | 53,250 |
| Hyde Park | 15,716 | ..... |
| Jacksonville | 10,927 | 273,336 |
| Joliet | 16,145 | 54,000 |
| Moline | 7,805 | 28,071 |
| Ottawa | 7,598 | 60,000 |
| Peoria | 29,315 | 716,500 |
| Quincy | 27,275 | 1,917,888 |
| Rockford | 13,136 | 178,090 |
| Rock Island | 11,660 | 289,050 |
| Springfield | 19,746 | 778,780 |
| **Indiana.** | | |
| Evansville | 29,280 | None. |
| Fort Wayne | 26,681 | 856,900 |
| Indianapolis | 75,074 | 1,914,500 |
| Jeffersonville | 10,422 | 240,350 |
| Lafayette | 14,860 | None. |
| Logansport | 11,198 | 456,276 |
| Madison | 8,945 | 232,051 |
| New Albany | 16,422 | 358,482 |
| Richmond | 12,743 | 167,000 |
| South Bend | 13,279 | 337,600 |
| Terre Haute | 26,040 | 267,224 |
| Vincennes | 7,680 | 38,831 |
| **Iowa.** | | |
| Burlington | 19,450 | 128,062 |
| Cedar Rapids | 10,104 | 40,867 |
| Council Bluffs | 18,059 | 138,400 |
| Davenport | 21,834 | 290,675 |
| Des Moines | 22,408 | 578,000 |
| Dubuque | 22,254 | 804,611 |
| Iowa City | 7,123 | 74,967 |
| Keokuk | 12,117 | 372,375 |
| Muscatine | 8,294 | ..... |
| Ottumwa | 9,004 | 17,795 |
| Waterloo | 5,630 | 2,000 |
| **Kansas.** | | |
| Atchinson | 15,106 | 449,687 |
| Lawrence | 8,511 | 654,115 |
| Leavenworth | 16,550 | 396,573 |
| Topeka | 15,451 | 333,249 |

## POPULATION AND DEBTS OF CITIES, &c.—(*Continued.*)

| | Population. | Net debt. | | Population. | Net debt. |
|---|---|---|---|---|---|
| **Kentucky.** | **1880.** | Dollars. | **Massachusetts.** | **1880.** | Dollars. |
| Covington | 29,720 | 1,030,000 | Waltham | 11,711 | 477,000 |
| Lexington | 16,656 | 84.316 | Westfield | 7,587 | 404.788 |
| Louisville | 123,645 | 4.842.935 | Weymouth | 10,571 | 64.392 |
| Newport | 20,433 | 966.618 | Woburn | 10,198 | 626.602 |
| Owensborough | 5.516 | 67.000 | Worcester | 58,295 | 2,447,543 |
| Paducah | 8,376 | 138,000 | **Michigan.** | | |
| **Louisiana.** | | | Adrian | 7,849 | 59,400 |
| New Orleans | 216.140 | ..... | Ann Arbor | 8.061 | 16,000 |
| Shreveport | 11,017 | ..... | Bay City | 20.693 | 433,100 |
| **Maine.** | | | Detroit | 116,342 | 1,282,772 |
| Bangor | 16.857 | 2,661.000 | East Saginaw | 19.016 | 611.055 |
| Biddeford | 12,652 | 183.874 | Grand Rapids | 32.015 | 471,000 |
| Lewiston | 19.083 | 1.038.102 | Jackson | 16.105 | 183.500 |
| Portland | 33,810 | 4,322,154 | Kalamazoo | 11.937 | 25,000 |
| **Maryland.** | | | Lansing | 8,319 | 105.400 |
| Baltimore | 332.190 | 27,092.690 | Muskegon | 11,262 | 180,000 |
| Cumberland | 10,666 | 394.064 | Port Huron | 8.883 | 349,000 |
| Frederick | ..... | 559,989 | Saginaw City | 10,525 | 202,800 |
| **Massachusetts.** | | | **Minnesota.** | | |
| Abington | 3.697 | ..... | Minneapolis | 46,887 | 1,137,467 |
| Attleborough | 11.111 | 16.600 | Red Wing | 5,876 | 45,445 |
| Beverly | 8.445 | 986.969 | Stillwater | 9,054 | 82.400 |
| Boston | 362 535 | 28,244.017 | Saint Paul | 41,498 | 1,526,715 |
| Brockton | 13,608 | 71,200 | Winona | 10,208 | 183,000 |
| Brookline | 8.053 | 1.476.350 | **Mississippi.** | | |
| Cambridge | 52,740 | 3,403.723 | Natchez | 7.058 | 21,734 |
| Chelsea | 21,785 | 1,554.496 | Vicksburg | 11,814 | 373,218 |
| Chicopee | 11.325 | 100,050 | **Missouri.** | | |
| Clinton | 8.030 | 99.500 | Campbell | ..... | ..... |
| Fall River | 49.006 | 3,169,765 | Central | 7.485 | ..... |
| Fitchburg | 12.405 | 770.778 | Hannibal | 11.074 | 144.027 |
| Gloucester | 19.329 | 193,370 | Kansas City | 55.813 | 1,339.224 |
| Haverhill | 18.475 | 393.428 | St. Joseph | 32,484 | 2.445.600 |
| Holyoke | 21.851 | 878.454 | St. Louis | 350,522 | 22,847,761 |
| Lawrence | 39,178 | 1.712,000 | Sedalia | 9,561 | ..... |
| Lowell | 59.485 | 1.554,275 | **Nebraska.** | | |
| Lynn | 38.284 | 2,072,815 | Lincoln | 13,004 | 199,615 |
| Malden | 12,017 | 483,523 | Omaha | 30,518 | 227,578 |
| Marlborough | 10,126 | 151,951 | **Nevada.** | | |
| Medford | 7.573 | 463,726 | Carson City | 4.227 | ..... |
| Milford | 9,310 | 194,550 | Virginia City | 13,705 | 112,000 |
| Natick | 8.480 | 303,303 | **New Hampshire.** | | |
| New Bedford | 26.875 | 1,086.000 | Concord | 13,836 | 615.500 |
| Newburyport | 13.537 | 428.706 | Dover | 11.687 | 458,830 |
| Newton | 16.995 | 993.591 | Manchester | 32.630 | 929.000 |
| North Adams | 10.192 | 267,894 | Nashua | 13,397 | 458.661 |
| Northampton | 12.172 | 537,500 | Portsmouth | 9,690 | 448,400 |
| Peabody | 9.028 | 289,300 | **New Jersey.** | | |
| Pittsfield | 13.367 | 385.341 | Bayonne | 9.372 | 650.275 |
| Quincy | 10.529 | 65.980 | Bridgeton | 8,729 | 74,000 |
| Salem | 27.598 | 1.162.487 | Camden | 41.658 | 1,164.900 |
| Somerville | 24.985 | 1.596.974 | Elizabeth | 28,229 | 5,512,638 |
| Springfield | 33.340 | 1,928.000 | Hackensack | ..... | ..... |
| Taunton | 21,213 | 449,735 | Hoboken | 30,999 | 1,099,250 |

## POPULATION AND DEBTS OF CITIES, &c.—(*Continued.*)

| | Population. | Net debt. | | Population. | Net debt. |
|---|---|---|---|---|---|
| **New Jersey.** | **1880.** | Dollars. | **New York** (*Cont'd*) | **1880.** | Dollars. |
| Jersey City | 120,728 | 15,598,435 | Watertown | 10,697 | 407,500 |
| Millville | 7,660 | 37,000 | Watervliet | 22,220 | ..... |
| Newark | 136,400 | 9,070,032 | West Troy | 11,532 | Nothing. |
| NewBrunswick | 17,167 | 1,618,946 | Yonkers | 18,892 | 1,388,000 |
| Orange | 13,206 | 253,832 | **North Carolina.** | | |
| Paterson | 50,887 | 1,359,500 | New Berne | 6,443 | 3,227 |
| Plainfield | 8,126 | 45,500 | Raleigh | 14,110 | 138,357 |
| Trenton | 29,910 | 1,664,501 | Wilmington | 17,361 | 539,845 |
| **New York.** | | | **Ohio.** | | |
| Albany | 90,903 | 3,138,500 | Akron | 16,512 | 17,619 |
| Amsterdam | 11,711 | ..... | Bellaire | 8,025 | 106,000 |
| Auburn | 21,924 | 530,000 | Canton | 12,258 | 180,657 |
| Binghamton | 17,315 | 299,500 | Chillicothe | 10,938 | None. |
| Brookhaven | 11,544 | ..... | Cincinnati | 255,708 | 21,992,500 |
| Brooklyn | 566,689 | 38,040,000 | Cleveland | 160,142 | 4,076,946 |
| Buffalo | 155,137 | 8,211,934 | Columbus | 51,665 | 1,259,162 |
| Cohoes | 19,417 | 141,214 | Dayton | 38,677 | 1,101,520 |
| Elmira | 20,541 | 270,400 | Delaware | 6,894 | 77,300 |
| Fishkill | 10,732 | ..... | Fremont | 8,451 | 44,000 |
| Flushing | 15,919 | ..... | Hamilton | 12,121 | 48,067 |
| Greenburgh | 9,861 | ..... | Ironton | 8,857 | 243,758 |
| Hempstead | 18,160 | ..... | Mansfield | 9,859 | 195,737 |
| Hornellsville | 8,195 | 54,400 | Newark | 9,602 | 55,402 |
| Hudson | 8,669 | 321,250 | Piqua | 6,033 | 294,219 |
| Huntington | 8,098 | ..... | Pomeroy | 5,560 | 151,000 |
| Ithaca | 9,105 | 66,303 | Portsmouth | 11,314 | 317,809 |
| Jamaica | 10,089 | ..... | Sandusky | 15,838 | 381,215 |
| Johnstown | 16,626 | ..... | Springfield | 20,729 | 58,627 |
| Kingston | 18,342 | 644,880 | Steubenville | 12,093 | 30,190 |
| Lenox | 10,249 | ..... | Tiffin | 7,879 | 55,500 |
| Lockport | 13,522 | 108,667 | Toledo | 50,143 | 3,232,660 |
| Long Isl'd City | 17,117 | 950,000 | Urbana | 6,252 | 32,903 |
| Middletown | ..... | ..... | Xenia | 7,026 | 66,187 |
| Morrisania | ..... | ..... | Youngstown | 15,431 | 193,406 |
| New Lots | 13,681 | ..... | Zanesville | 18,120 | 529,097 |
| New York | 1 206,590 | 109 425,414 | **Oregon.** | | |
| Newburgh | 18,050 | 313,400 | Portland | 17,598 | 76,500 |
| Ogdensburgh | 10,340 | 135,000 | **Pennsylvania.** | | |
| Oswego | 21,117 | 1,264,224 | Allegheny | 78,681 | 1,596,429 |
| Owego | 9,883 | ..... | Allentown | 18,068 | 430,443 |
| Oyster Bay | 11,923 | ..... | Altoona | 19,716 | 368,830 |
| Palmyra | 21,493 | ..... | Bethlehem | 5,193 | 140,700 |
| Poughkeepsie | 20,207 | 1,939,198 | Carbondale | 7,714 | 9,369 |
| Port Jervis | 4,824 | None. | Carlisle | 6,209 | 139,100 |
| Rochester | 89,363 | 5,701,686 | Chester | 14,996 | 357,084 |
| Rome | 12,045 | 160,000 | Columbia | 8,312 | ..... |
| Saratoga | 10,822 | 297,600 | Cornplanter | ..... | ..... |
| Saugerties | 10,375 | ..... | Danville | 7,790 | ..... |
| Schenectady | 13,675 | 118,000 | Easton | 11,924 | 219,949 |
| Seneca | 2,877 | ..... | Erie | 27,730 | 1,201,229 |
| Syracuse | 51,791 | 1,351,500 | Harrisburg | 30,762 | 1,065,300 |
| Troy | 56,747 | 958,296 | Hickory | ..... | ..... |
| Utica | 33,913 | 766,000 | Lancaster | 25,769 | 464,142 |
| Wallkill | 11,483 | ..... | Lebanon | 8,778 | 208,700 |

## POPULATION AND DEBTS OF CITIES, &c.—(*Continued.*)

| | Population. | Net debt. | | Population. | Net debt. |
|---|---|---|---|---|---|
| **Pennsylvania.** | **1880.** | Dollars. | **Texas.** | **1880.** | Dollars. |
| Lock Haven | 5,845 | 208,743 | Austin | 10,960 | 106,744 |
| Mahanoy | 7,181 | ..... | Brenham | 4,114 | ..... |
| Meadville | 8,860 | 77,699 | Dallas | 10,358 | 304,356 |
| New Castle | 8,416 | 72,624 | Galveston | 22,253 | 1,023,249 |
| Norristown | 13,064 | 81,200 | Houston | 18,646 | 1,501,591 |
| Oil City | 7,315 | 122,400 | San Antonio | 20,561 | 155,266 |
| Philadelphia | 846,984 | 16,251,696 | Sherman | 9,248 | 129,000 |
| Pittsburgh | 156,381 | 14,134,296 | Waco | 7,296 | 100,000 |
| Pottsville | 13,253 | ..... | **Utah.** | | |
| Reading | 43,280 | 999,000 | Ogden City | ..... | 3,333 |
| Scranton | 45,850 | 325,202 | Salt Lake City | 20,768 | 67,000 |
| Shamokin | 8,184 | 37,680 | **Vermont.** | | |
| Titusville | 9,046 | 328,267 | Burlington | 11,364 | 383,427 |
| Wilkesbarre | 23,339 | 95,096 | Rutland | 12,149 | 202,460 |
| Williamsport | 18,934 | 651,272 | **Virginia.** | | |
| York | 13,940 | 33,000 | Alexandria | 13,658 | 1,037,088 |
| **Rhode Island.** | | | Dan River | 8,382 | ..... |
| Lincoln | 13,765 | 50,000 | Lynchburg | 15,959 | 794,837 |
| Newport | 15,693 | 116,408 | Norfolk | 21,966 | 2,187,371 |
| N. Providence | 1,467 | 39,800 | Petersburg | 21,656 | 1,136,100 |
| Pawtucket | 19,030 | 935,000 | Portsmouth | 11,388 | 283,014 |
| Providence | 104,050 | 9,373,026 | Richmond | 63,803 | 4,399,021 |
| Warwick | 12,163 | 57,500 | **West Virginia.** | | |
| Woonsocket | 16,053 | 230,000 | Parkersburg | 6,582 | ..... |
| **South Carolina.** | | | Wheeling | 31,266 | 531,882 |
| Charleston | 49,999 | 4,129,102 | **Wisconsin.** | | |
| Columbia | 10,040 | 900,000 | Eau Claire | 10,118 | 101,000 |
| St. James, Goose Creek, | 10,615 | ..... | Fond du Lac | 13,091 | 165,000 |
| St. John's, Berkeley | 9,586 | ..... | Green Bay | 7,735 | 147,140 |
| St. John's, Colleton | 10,388 | ..... | Janesville | 9,018 | 34,000 |
| **Tennessee.** | | | La Crosse | 14,505 | 135,000 |
| Chattanooga | 12,892 | 71,506 | Madison | 10,325 | 136,768 |
| Knoxville | 9,690 | 212,288 | Milwaukee | 115,578 | 2,160,289 |
| Memphis | 33,593 | None. | Oshkosh | 15,749 | 130,500 |
| Nashville | 43,461 | 1,606,200 | Racine | 16,031 | 218,512 |
| | | | Sheboygan | 7,314 | 230,000 |
| | | | Watertown | 7,883 | 229,400 |

Total Population of 299 Cities and Towns..... 11,876,146
Aggregate Debt of 299 Cities and Towns.....$549,904,979

## AREA AND POPULATION OF THE EARTH.

| Divisions. | Area. | Population. | Pop. to Sq. M. |
|---|---|---|---|
| America | 14,700,000 | 95,495,500 | 6½ |
| Europe | 3,800,000 | 315,929,000 | 83 |
| Asia | 15,000,000 | 834,707,000 | 55½ |
| Africa | 10,800,000 | 205,679,000 | 19 |
| Oceanica | 4,500,000 | 27,896,000 | 6 |
| Total | 48,800,000 | 1,479,706,500 | 30⅓ |

## RECEIPTS AND DISBURSEMENTS OF THE GOVERNMENT OF THE UNITED STATES,

*From the organization of the Government to June 30, 1879, and the amount of Losses, and the ratio of such Losses per $1000 to the aggregate received and disbursed, arranged as nearly as practicable in periods of Administrations. Also, in the periods prior and subsequent to June 30, 1861. Prepared by the Treasury Department in answer to numerous inquiries.*

| ADMINISTRATION. | Years of service. | Total Receipts from Customs, Internal Revenue, Public Lands, Loans, Dividends, Interest, Premiums, Direct Tax, and miscellaneous sources. | | | Total Disbursements on account of Public Debt, Premiums, War, Navy, Pensions, Interest, Indians, and all civil expenses, exclusive of Post Office, which manages its own revenues. | | | RECAPITULATION. | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Receipts. | Losses. | Loss on $1000. | Disbursements. | Losses. | Loss on $1000. | Amount involved. | Total Losses. | Loss on $1000. |
| Washington | 8 | $ 56.448,721 | $210.552 | $3 72 | $ 55.426,822 | $ 38,498 | $ 0 69 | $ 112,560.504 | $ 250.970 | $2 22 |
| Adams, John | 4 | 46.085.418 | 42.250 | 91 | 43,811.926 | 190.950 | 4 35 | 90.733,612 | 235.412 | 2 59 |
| Jefferson | 8 | 108,238,978 | 287.260 | 2 65 | 107,686.312 | 303.834 | 2 82 | 219,072,736 | 603.468 | 2 75 |
| Madison | 8 | 266,246.515 | 294.975 | 1 10 | 255,105,106 | 1.855 447 | 7 27 | 526.764,050 | 2.191.660 | 4 16 |
| Monroe | 8 | 178,649,964 | 629,947 | 3 52 | 188,437,780 | 2,492,536 | 13 22 | 376.328,275 | 3.229.787 | 8 58 |
| Adams, J. Q. | 4 | 97,818.055 | 332.953 | 3 40 | 97.264.000 | 513,829 | 5 28 | 201.488.077 | 885.374 | 4 39 |
| Jackson | 8 | 255,182,775 | 1,412.388 | 5 53 | 223.546.050 | 2.306.237 | 10 31 | 500.081,748 | 3.761.112 | 7 52 |
| Van Buren | 4 | 129,948,549 | 392,328 | 3 01 | 137,094,438 | 2,899,654 | 21 15 | 285,327,949 | 3,343,792 | 11 71 |
| Harrison .. Tyler | 4 | 116,736,005 | 429,981 | 3 68 | 109.187.401 | 1,133,242 | 10 37 | 244,590,156 | 1,565.903 | 6 40 |
| Polk | 4 | 201,857,508 | 18,110 | 08 | 205,194,701 | 1,712,170 | 8 34 | 423,913,687 | 1,732.851 | 4 08 |
| Taylor Fillmore | 4 | 211,908,613 | 276,279 | 1 30 | 194,370,493 | 1,485.193 | 7 64 | 432,861,677 | 1,814.409 | 4 19 |
| Pierce | 4 | 282.179.830 | 213,002 | 75 | 285.638.876 | 1.674.853 | 5 86 | 608.257.816 | 2,167,982 | 3 56 |
| Buchanan | 4 | 312.359.680 | 194.004 | 62 | 328,183.268 | 2.292.825 | 6 98 | 697.500.871 | 2.659.108 | 3 81 |
| Lincoln | 4 | 4.670.460.138 | 508.494 | 10 | 4.667,457.921 | 6.599.023 | 1 41 | 9.386.697.144 | 7.200,984 | 76 |
| Johnson | 4 | 4.042.316.438 | 2.562.722 | 63 | 3,891.576.259 | 1.889,641 | 48 | 8,014.908.984 | 4.619.600 | 57 |
| Grant | 8 | 5.318,693,324 | 1,189,140 | 22 | 5,287.604 646 | 1,138.541 | 21 | 10.842.922.583 | 2,622.479 | 24 |
| Hayes | 2 | 1,728,979,907 | None. | None. | 1,557,034,964 | 1,384 | 00 | 3.353.629.856 | 2.677 | 8-10 mill |
| Prior to June 30, 1861 | .... | $18,024,115,418 | $8 994 375 | 49 | $17.634.620.963 | $28 527 858 | $1 61 | $36.317.639.725 | $38 887 568 | $1 07 |
| July 1, 1861, to June 30, 1879 | .... | $ 2,263,660,611 | $4,734,026 | $2 09 | $2,230,947,173 | $18 899 269 | $8 47 | $ 4,719,481,157 | $24 441 829 | $5 17 |
| | .... | 15,760,454,807 | 4,260,355 | 27 | 15,403,673,790 | 9 628 589 | 62 | 31,598,158,568 | 14 445 739 | 46 |

## POPULATION OF THE UNITED STATES, BY RACES, IN 1870 AND 1880.

| | States and Territories | Total Popul'n. 1880. | White. 1880. | Colored. 1880. | Chinese. 1880. | Ind'ns. civ. or taxed. 1880. | White. 1870. | Colored. 1870. | Chinese. 1870. | Ind'ns civ. or taxed. 1870. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Alabama | 1,262,794 | 661,986 | 600,141 | 4 | 213 | 521,384 | 475,510 | .... | 98 |
| 2 | Arizona | 40,441 | 35,178 | 138 | 1,632 | 3,493 | 9,581 | 26 | 20 | 31 |
| 3 | Arkansas | 802,564 | 591,611 | 210,622 | 134 | 197 | 362,115 | 122,169 | 98 | 89 |
| 4 | California | 864,686 | 767,266 | 6,168 | 75,122 | 16,130 | 499,424 | 4,272 | 49,310 | 7,241 |
| 5 | Colorado | 194,649 | 191,452 | 2,459 | 610 | 128 | 39,221 | 456 | 7 | 180 |
| 6 | Conn. | 622,683 | 610,884 | 11,422 | 130 | 241 | 527,549 | 9.668 | 2 | 235 |
| 7 | Dakota | 135,180 | 133,177 | 381 | 238 | 1,384 | 12,887 | 94 | .... | 1,200 |
| 8 | Delaware | 146,654 | 120,198 | 26,456 | .... | .... | 102,221 | 22,794 | .... | .... |
| 9 | Dist. of C. | 177,638 | 118,236 | 59,378 | 18 | 6 | 88,278 | 43,404 | 3 | 15 |
| 10 | Florida | 267 351 | 141,249 | 125,262 | 18 | 37 | 96,057 | 91,689 | .... | 2 |
| 11 | Georgia | 1,539 048 | 814,218 | 724,654 | 17 | 94 | 638,926 | 545,142 | 1 | 40 |
| 12 | Idaho | 32 811 | 29,011 | 58 | 3,378 | 164 | 10,618 | 60 | 4,274 | 47 |
| 13 | Illinois | 3,078.769 | 3,022,174 | 46,248 | 214 | 133 | 2,511,096 | 28,762 | 1 | 32 |
| 14 | Indiana | 1,978,362 | 1,939,094 | 38,998 | 37 | 233 | 1,655,837 | 24,560 | .... | 240 |
| 15 | Iowa | 1,624.620 | 1,614,510 | 9,442 | 47 | 464 | 1,188,207 | 5,762 | 3 | 748 |
| 16 | Kansas | 995 966 | 952,056 | 43,096 | 22 | 792 | 346.377 | 17,108 | .... | 914 |
| 17 | Kentucky | 1,648,708 | 1,377,077 | 271,462 | 10 | 50 | 1,098,692 | 222,210 | 1 | 108 |
| 18 | Louisiana | 940,103 | 455,063 | 483,898 | 483 | 819 | 362,065 | 364,210 | 71 | 569 |
| 19 | Maine | 648,945 | 646,903 | 1,427 | 8 | 607 | 624,809 | 1,606 | 1 | 499 |
| 20 | Maryland | 934.632 | 724,718 | 209,897 | 6 | 11 | 605,497 | 175,391 | 2 | 4 |
| 21 | Mass. | 1,783,012 | 1,764,082 | 18,644 | 256 | 341 | 1,443,156 | 13,947 | 97 | 151 |
| 22 | Michigan | 1,636 331 | 1,614,078 | 14,986 | 29 | 7,238 | 1,167,282 | 11,849 | 2 | 4,926 |
| 23 | Minnes'ta | 780,806 | 776,940 | 1,558 | 54 | 2,254 | 438,257 | 759 | .... | 690 |
| 24 | Mississ'pi | 1,131,592 | 479,371 | 650,337 | 52 | 1,832 | 382,896 | 444,201 | 16 | 809 |
| 25 | Missouri | 2,168,,804 | 2,023,568 | 145,046 | 194 | 96 | 1,603,146 | 118,071 | 3 | 75 |
| 26 | Montana | 39,157 | 35,468 | 202 | 1,737 | 1,750 | 18,306 | 133 | 1,949 | 157 |
| 27 | Nebraska | 452,433 | 449,305 | 2,376 | 18 | 233 | 122,117 | 789 | .... | 87 |
| 28 | Nevada | 62,265 | 53,574 | 465 | 5,423 | 2,803 | 38,959 | 357 | 3,152 | 23 |
| 29 | N. Hamp. | 346,984 | 346,264 | 646 | 14 | 60 | 317,697 | 580 | .... | 23 |
| 30 | N. Jersey | 1,130,983 | 1,091,856 | 38,796 | 182 | 53 | 875,497 | 30,658 | 15 | 16 |
| 31 | N. Mexico | 118,430 | 107,188 | 907 | 55 | 10,280 | 90,393 | 172 | .... | 1,309 |
| 32 | New York | 5,083,810 | 5,017,142 | 64,943 | 942 | 783 | 4,330,210 | 52,081 | 20 | 439 |
| 33 | N. Carol'a | 1,400,047 | 867,467 | 531,316 | 1 | 1,216 | 678,470 | 391,650 | .... | 1,241 |
| 34 | Ohio | 3,198,239 | 3,118,344 | 79,655 | 117 | 113 | 2,601,946 | 63,213 | 1 | 100 |
| 35 | Oregon | 174,767 | 163,087 | 493 | 9,508 | 1,679 | 86,929 | 346 | 3,330 | 313 |
| 36 | Penn. | 4,282,786 | 4,197,106 | 85,342 | 170 | 168 | 3,456,699 | 65,294 | 14 | 34 |
| 37 | Rhode I'd | 276,528 | 269,933 | 6,503 | 27 | 67 | 212,219 | 4,980 | .... | 154 |
| 38 | S. Carol'a | 995,622 | 391,258 | 604,325 | 9 | 114 | 289,667 | 415,814 | 1 | 124 |
| 39 | Tenn. | 1,542,463 | 1,139,120 | 402,992 | 26 | 326 | 956,119 | 322,331 | .... | 70 |
| 40 | Texas | 1,592,574 | 1,197,493 | 394,007 | 142 | 932 | 564,700 | 253,475 | 25 | 379 |
| 41 | Utah | 143,906 | 142,381 | 204 | 518 | 804 | 86,044 | 118 | 445 | 179 |
| 42 | Vermont | 332,286 | 331,243 | 1,032 | .... | 11 | 329,613 | 924 | .... | 14 |
| 43 | Virginia | 1,512,806 | 880,739 | 631,996 | 6 | 65 | 712,089 | 512,841 | 4 | 229 |
| 44 | Washin'n | 75,120 | 67,349 | 357 | 3,227 | 4,187 | 22,195 | 207 | 234 | 1,319 |
| 45 | West Va. | 618,443 | 592,433 | 25,729 | 14 | 17 | 424,033 | 17,980 | .... | 1 |
| 46 | Wiscon'n | 1,315,480 | 1,309,622 | 2,724 | 16 | 3,118 | 1,051,351 | 2,113 | .... | 1,206 |
| 47 | Wyoming | 20,788 | 19,436 | 299 | 914 | 139 | 8,726 | 183 | 143 | 66 |
| | Total U. S. | 50,152,866 | 43.402,408 | 6,577 497 | 105,679 | 65.880 | 33.592.245 | 4,886,387 | 63.254 | 25.731 |

PER CENT. OF INCREASE FROM 1870 TO 1880.

| | | | |
|---|---|---|---|
| Total Population | 30.06 per cent. | Chinese Population | 67.07 per cent. |
| White Population | 28. 2 " | Indian Population (civilized or taxed) | 156.02 " |
| Colored Population | 34.78 " | | |

NOTE.—The inhabitants of Alaska and the Indian Territory (both unorganized as yet) are not included in the above total. The census of Alaska in 1880 showed: White, 392; Creoles (issue of intermarriages between the whites and natives), 1,683; Aleuts, 1,960; Innuits, 17,488; Indians, 8,655; total, 30.178.

The Indian Territory is estimated to contain 60,000 to 75,000 inhabitants.

The Indians included in the census in each State and Territory are those reckoned as civilized, or outside of tribal organizations. Indians not taxed are by law excluded from the census. Estimates of their numbers vary widely—from 200,000 to 350,000 (the latter as estimated in the census of 1870).

In the Chinese column have been reckoned a very few Japanese, East Indians, and Sandwich Islanders, not exceeding 250 in all.

## POPULAR AND ELECTORAL VOTE FOR PRESIDENT, 1880.

| States. | Garfield. Rep. | Hancock. Dem. | Weaver. Gr. | Scattering. | G'rfd's Plu'ty. | H'ck's Plu'ty. | Total Popular vote. | Electoral vote. Garfield. | Hancock. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|
| Alabama | 56,178 | 90,687 | 4,642 | .... | .... | 34,509 | 151,507 | .... | 10 | 10 |
| Arkansas | 41,661 | 60,489 | 4,079 | .... | .... | 18,828 | 106,229 | .... | 6 | 6 |
| California | 80,348 | 80,426 | 3,392 | .... | .... | 78 | 164,166 | 1 | 5 | 6 |
| Colorado | 27,450 | 24,647 | 1,435 | .... | 2,803 | .... | 53,532 | 3 | .... | 3 |
| Connecticut | 67,073 | 64,417 | 868 | 412 | 2,656 | .... | 132,770 | 6 | .... | 6 |
| Delaware | 14,150 | 15,183 | .... | .... | .... | 1,033 | 29,333 | .... | 3 | 3 |
| Florida | 23,654 | 27,964 | .... | .... | .... | 4,310 | 51,618 | .... | 4 | 4 |
| Georgia | 52,648 | 102,522 | 481 | .... | .... | 49,874 | 155,651 | .... | 811 | 11 |
| Illinois | 318,037 | 277,321 | 26,358 | 596 | 40,716 | .... | 622,312 | 21 | .... | 21 |
| Indiana | 232,164 | 225,528 | 12,986 | .... | 6,636 | .... | 470,678 | 15 | .... | 15 |
| Iowa | 183,904 | 105,845 | 32,327 | 630 | 78,059 | .... | 322,706 | 11 | .... | 11 |
| Kansas | 121,520 | 59,789 | 19,710 | .... | 61,731 | .... | 201,019 | 5 | .... | 5 |
| Kentucky | 104,550 | 147,999 | 11,498 | 257 | .... | 43,449 | 264,304 | .... | 12 | 12 |
| Louisiana1 | 31,891 | 65,310 | .... | .... | .... | 33,419 | 97,201 | .... | 8 | 8 |
| Maine2 | 74,039 | 65,171 | 4,408 | 235 | 8,868 | .... | 143,853 | 7 | .... | 7 |
| Maryland | 78,515 | 93,706 | 818 | .... | .... | 15,191 | 173,039 | .... | 8 | 8 |
| Massachusetts | 165,205 | 111,960 | 4,548 | 799 | 53,245 | .... | 282,512 | 13 | .... | 13 |
| Michigan | 185,190 | 131,300 | 34,795 | 1,156 | 53,890 | .... | 352,441 | 11 | .... | 11 |
| Minnesota | 93,903 | 53,315 | 3,267 | 286 | 40,588 | .... | 150,771 | 5 | .... | 5 |
| Mississippi | 34,854 | 75,750 | 5,797 | 677 | .... | 40,896 | 117,078 | .... | 8 | 8 |
| Missouri | 153,567 | 208,600 | 35,045 | .... | .... | 55,042 | 397,221 | .... | 15 | 15 |
| Nebraska | 54,979 | 28,523 | 3,853 | .... | 26,456 | .... | 87,355 | 3 | .... | 3 |
| Nevada3 | 8,732 | 9,611 | .... | .... | .... | 879 | 18,343 | .... | 3 | 3 |
| N. Hampshire | 44,852 | 40,794 | 528 | 189 | 4,058 | .... | 86,363 | 5 | .... | 5 |
| New Jersey | 120,555 | 122,565 | 2,617 | 191 | .... | 2,010 | 245,928 | .... | 9 | 9 |
| New York | 555,544 | 534,511 | 12,372 | 2,177 | 21,033 | .... | 1,104,605 | 35 | .... | 35 |
| North Carolina | 115,878 | 124,204 | 1,136 | .... | .... | 8,326 | 241,218 | .... | 10 | 10 |
| Ohio | 375,048 | 340,821 | 6,456 | 2,642 | 34,227 | .... | 724,967 | 22 | .... | 22 |
| Oregon | 20,619 | 19,948 | 249 | .... | 671 | .... | 40,816 | 3 | .... | 3 |
| Pennsylvania | 444,704 | 407,428 | 20,668 | 1,983 | 37,276 | .... | 874,783 | 29 | .... | 29 |
| Rhode Island | 18,195 | 10,779 | 236 | 25 | 7,416 | .... | 29,235 | 4 | .... | 4 |
| South Carolina | 58,071 | 112,312 | 566 | 7 | .... | 54,241 | 170,956 | .... | 7 | 7 |
| Tennessee | 107,677 | 128,191 | 5,916 | 43 | .... | 20,514 | 241,827 | .... | 12 | 12 |
| Texas4 | 57,845 | 156,228 | 27,405 | .... | .... | 98,383 | 241,478 | .... | 8 | 8 |
| Vermont5 | 45,090 | 18,181 | 1,212 | 110 | 26,909 | .... | 64,593 | 5 | .... | 5 |
| Virginia6 | 84,020 | 127,976 | 139 | .... | .... | 43,956 | 212,135 | .... | 11 | 11 |
| West Virginia | 46,243 | 57,391 | 9,079 | .... | .... | 11,148 | 112,713 | .... | 5 | 5 |
| Wisconsin | 144,397 | 114,634 | 7,980 | 161 | 29,763 | .... | 267,172 | 10 | .... | 10 |
| Total | 4,442,950 | 4,442,035 | 306,867 | 712,576 | 537,001 | 536,086 | 9,204,428 | 214 | 155 | 369 |
| Plurality | 915 | | | | 915 | | | 59 | | |
| Per cent. | 48.26 | 48.25 | 3.33 | .13 | .... | .... | .... | 58.00 | 42.00 | |

NOTE.—Numerous variations in the Presidential vote are found in the different tables published. One principal source of discrepancy is in taking the vote for different Electors, of either party, as representing the vote for President. As the votes for Electors vary greatly, some tables take the highest vote cast for any one Elector; others, the highest cast for any Elector-at-large; and others still, the average vote cast for all the Electors of each party.

1. In Louisiana, two Republican Electoral tickets were voted for: the regular Republican, and the Beattie, or Grant Republican. The latter received about 9,740 votes, not enumerated above.

2. In Maine, the Hancock Electoral ticket was styled "Fusion," containing 3 Democratic and 4 Greenback Electors. Besides this, a "Straight" Greenback Electoral ticket was voted for, with Weaver's name at the head.

3. The above vote in Nevada and Tennessee is from the State Officers. Other statements vary largely in the vote of both parties.

4. The footings in Texas are correct, as rendered to the Secretary of State, but three Counties made no return of votes for President (Denton, Galveston and McMullen). If these cast as many votes for Electors as for Governor, it would increase Hancock's vote in the State, 5,820, and Garfield's 1,746, and Weaver's 593.

5. These figures are the finally corrected returns in the Office of the Secretary of State. Earlier statements gave Garfield 45,567 votes, and Hancock 18,316 votes.

6. Two Democratic Electoral tickets were voted for in Virginia, the Regular or Debt-paying Hancock Ticket, and the Re-adjuster, or Mahone Hancock ticket. Both are added together above.

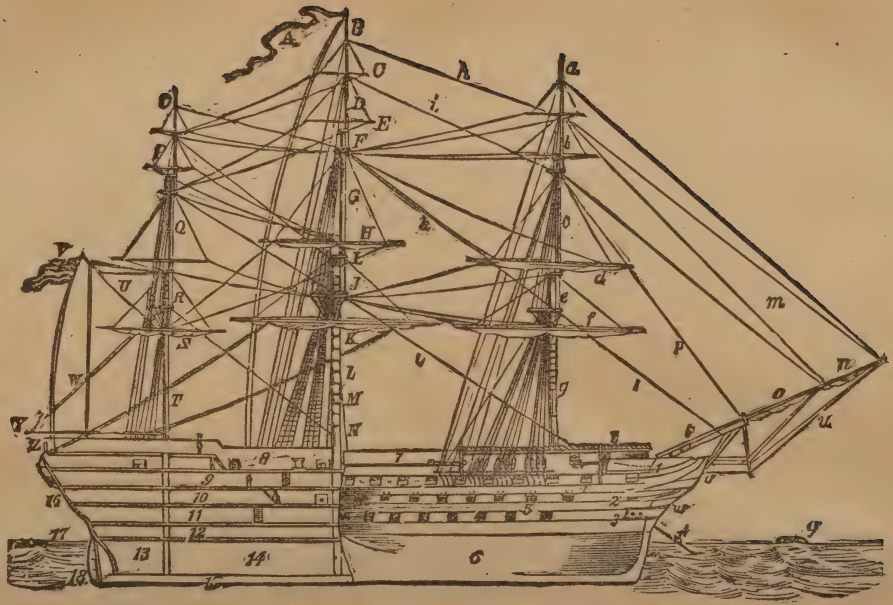
7. Of the scattering votes, 10,305 were cast for Neal Dow, "Prohibition" candidate for President, and 707 votes for John W. Phelps, "American" or Anti-Secret-Society candidate.

8. The Electoral vote of Georgia was cast irregularly, on the 2d Wednesday of December, instead of the 1st Wednesday, as required by Act of Congress. In the count of the Electoral vote, February 9, 1881, Congress declared Hancock to have received 155 votes if Georgia were counted, and 144 votes if not counted; that in either case, Garfield had received a majority of the votes, and was duly elected.

# BOATS, VESSELS, &c.

**The following list contains the names of various kinds of boats, and also the parts of a ship and her rigging. The letters and figures refer to the parts named. (See engraving opposite.)**

**Barge.**
**Bark.**
**Brig.**
**Brigantine.**
**Cutter.**
**Dory.**
**Frigate.**
**Galley.**
**Gondola.**
**Gunboat.**
**Ketch.**
**Life-boat.**
**Long-boat.**
**Pinnace.**
**Revenue Cutter.**
**Schooner.**
**Skiff.**
**Ship.**
**Sloop.**
**Smack.**
**Steamboat.**
**Wherry.**
**Yacht.**
**Yawl.**
**Aft.**
**Anchor.**
**Binnacle.**
**Bows.—2**
**Bowsprit.—o**
**Bulwark.**
**Buoy.—y**
**Cable.—x**
**Capstan.**
**Cat-head.**
**Chains.—4**
**Cross-trees.—F**
**Cuddy.**
**Cut-water.—w**
**Davit.**
**Deck.**
**Ensign.—V**
**Figurehead.—v**
**Flying jib.—m.**
**Flying jib-boom.—n**
**Fore-cap.—d**
**Forecastle.—t**
**Foremast.—g.**
**Fore-royal (a sail).**
**Fore-royal mast.—a**
**Fore-royal yard.**
**Foresail.**
**Fore-stay.—r**
**Foretop.—e**
**Foretop-gall'nt mast.—b**
**Foretop-gallant sail.**
**Foretop-gallant yards.**
**Fore-topmast.—c**
**Fore-topmast stay.—p**
**Fore-topmast stay-sail.**
**Fore-topsail.**
**Fore-topsail yard.**
**Fore-yard.—f**
**Gaff.—U**
**Gangway.**
**Halliards. Halyards.**
**Hawse-holes.—3**
**Hawser.**
**Head-rail.—2**
**Helm.**
**Hold.—14**
**Hull.—6.**
**Jib.**
**Jib-boom.**
**Kedge.**
**Keel.—15**
**Kelson.**
**Larboard.**
**Lee-board.**
**Lee bow.**
**Lifts (to suspend yards).**
**Lower deck.—11**
**Main-cap.—I**
**Main-deck.—9**
**Mainmast.—L**
**Main-royal (a sail).**
**Main-royal mast.—B**
**Main-royal stay.—h**
**Main-royal yard.—C**
**Mainsail.**
**Main-stay.—1**
**Main-top.—J**
**Maintop-gal'nt mast.—D**
**Maintop-gallant sail.**
**Maintop-gallant stay.—i**
**Maintop-gal'nt yard.—E**
**Main-topmast —G**
**Main-topmast stay.—k**
**Main-topsail.**
**Main-topsail yard.—H**
**Main-yard.—K**
**Martingal.—u**
**Middle deck.—10**
**Mid-ship.**
**Mizzen-mast.—T**
**Mizzen-royal mast.—O**
**Mizzen-royal yard.**
**Mizzen-top.—R**
**Mizzen-top-gallant.—P**
**Mizzen-top-gallant sail.**
**Mizzen-top-gallant yard.**
**Mizzen-topmast.—Q**
**Mizzen-topsail.**
**Mizzen-topsail yard.**
**Mizzen-yard.—S**
**Orlop deck.—12**
**Pendant.—A**
**Port-holes.—5**
**Quarter-deck.—S**
**Rail.**
**Ratlines.—N**
**Rudder.—18**
**Shrouds.—M.**
**Spanker-boom.—Y**
**Spanker or mizzen (sail).**
**Spars.**
**Starboard.**
**Stern.—16.**
**Taffrail.—z**
**Thwart-ships.**
**Tiller.**
**Topping-lift.—W**
**Under-deck.—13**
**Waist.—7**
**Wake.—17**
**Windlass.**



The letters and figures refer to the Table on the page opposite.

# Heads of the Principal Nations of the World.

| Governments. | Rulers. | Title. | Birth. | Date of Accession. |
|---|---|---|---|---|
| Argentine Republic | Julio A. Roca | President | .... | Oct 12, 1880 |
| Austria-Hungary | Franz Joseph I | Emperor | 1830 | Dec 2, 1848 |
| Belgium | Leopold II | King | 1835 | Dec 10, 1865 |
| Bolivia | Nicolas Campero | President | .... | Ju 1, 1880 |
| Brazil | Pedro II. Alcantara | Emperor | 1825 | Apr 7, 1831 |
| Chili | Domingo Santa Maria | President | .... | Sep 18, 1881 |
| China | Kwong Shu | Emperor | 1871 | Jan 12, 1875 |
| Colombia | J. E. Otalora | President | .... | Apr 1, 1883 |
| Costa Rica | Prospero Fernandez | President | .... | Au 10, 1882 |
| Denmark | Christian IX | King | 1818 | No 15, 1863 |
| Ecuador | ..... | President | .... | ..... |
| Egypt | Tewfik Pacha | Khedive | 1852 | Au 8, 1879 |
| France | Francois P. Jules Grevy | President | 1813 | Jan 30, 1879 |
| Germany | Wilhelm I | Emperor | 1797 | Jan 18, 1871 |
| Anhalt | Friedrich | Duke | 1831 | Ma 22, 1871 |
| Baden | Friedrich I | Grand Duke | 1826 | Apr 24, 1852 |
| Bavaria | Ludwig II | King | 1845 | Ma 10, 1864 |
| Brunswick | Wilhelm I | Duke | 1806 | Ap 20, 1831 |
| Hesse | Ludwig IV | Grand Duke | 1837 | Ju 13, 1877 |
| Lippe | G. F. Waldemar | Prince | 1824 | Dec 8, 1875 |
| Mecklemburg-Schwerin | Friedrich Franz III | Grand Duke | 1851 | Ap 15, 1883 |
| Mecklemburg-Strelitz | Friedrich Wilhelm | Grand Duke | 1819 | Sep 6, 1860 |
| Oldenburg | Peter | Grand Duke | 1827 | Fe 27, 1853 |
| Prussia | Wilhelm I | King | 1797 | Jan 2, 1861 |
| Reuss-Schleiz | Henrich XIV | Prince | 1832 | Juy 10, 1867 |
| Saxe-Coburg and Gotha | Ernst II | Duke | 1818 | Jan 29, 1844 |
| Saxe-Meiningen | Georg II | Duke | 1826 | Sep 20, 1866 |
| Saxe-Weimar Eisenach | Karl Alexander | Grand Duke | 1818 | Juy 8, 1853 |
| Saxony | Albert | King | 1828 | Oct 29, 1873 |
| Waldeck | Georg Victor | Prince | 1831 | Ma 14, 1845 |
| Wurtemberg | Karl I | King | 1823 | Ju 25, 1864 |
| Gt Britain and Ireland | Victoria I | Queen & E. I | 1819 | Ju 20, 1837 |
| Greece | Georgois I | King | 1845 | Ju 6, 1863 |
| Guatemala | J. Rufino Barrios | President | .... | Ma 7, 1873 |
| Hayti | Gen. Salomon | President | .... | No 25, 1879 |
| Hawaiian Islands | Kalakaua I | King | 1836 | Fe 12, 1874 |
| Honduras | ..... | President | .... | Ma 29, 1877 |
| Italy | Humbert I | King | 1844 | Jan 9, 1878 |
| Japan | Mutsu Hito | Mikado | 1852 | Fe 13, 1867 |
| Mexico | Manuel Gonzales | President | .... | Dec 1, 1880 |
| Morocco | Muley-Hassan | Sultan | 1831 | Sep 25, 1873 |
| Netherlands | Willem III | King | 1817 | Mar 17, 1849 |
| Nicaragua | Adam Cardenas | President | .... | 1883 |
| Paraguay | Gen. B. Caballero | President | .... | Oct —, 1880 |
| Persia | Nassr-ed-deen | Shah | 1829 | Sep 10, 1844 |
| Peru | Miguel Iglesias | Presid't, act | .... | 1883 |
| Portugal | Luis I | King | 1838 | No 11, 1861 |
| Roumania | Karl I | King | 1839 | Mar 26, 1881 |
| Russia | Alexander III | Emperor | 1845 | Mar 1, 1881 |
| Salvador | Rafael Zaldivar | President | .... | Ap 30, 1876 |
| Santo Domingo | Ulysses Heureuch | President | .... | Juy —, 1882 |
| Servia | Milan I, Obrenovitch | King | 1855 | Mar 6, 1882 |
| Spain | Alfonso XII | King | 1857 | Dec 30, 1874 |
| Sweden and Norway | Oscar II | King | 1829 | Sep 18, 1872 |
| Switzerland | Emil Welti | President | .... | Jan 1, 1884 |
| Turkey | Abdul-Hamid-Khan | Sultan | 1842 | Au 31, 1876 |
| United States | Chester A. Arthur | President | 1830 | Sep 20, 1881 |
| Uruguay | Maximo Santos | President | .... | Mar 1, 1882 |
| Venezuela | Guzman Blanco | President | .... | Fe 26, 1879 |

## THE DOMINION OF CANADA.

The Dominion of Canada forms (since 1867) a confederate government, embracing the British North American Provinces of Ontario, Quebec, New Brunswick, Nova Scotia, Manitoba, British Columbia, North-west Territory, Vancouvers's Island, and Prince Edward Island. It has a representative parliament, meeting annually at Ottawa, the capital. The members of the Senate, 77 in number, are nominated for life by the summons of the Governor-General. The House of Commons, with 206 members, is elected by the people for five years, the right of suffrage being subject to a property qualification. The Governor-General, appointed in 1883, is the Marquis of Lansdowne, salary $50,000. The funded and unfunded debt in 1882 was $205,365,252, drawing interest at an average of 4.37 per cent., having increased to this amount from $93,000,000, in 1867. Against this was sinking fund, etc., with cash on hand, $51,703, 601. The revenue for the fiscal year ending June 30, 1882, was $33,383,455, derived from the following principal sources: Customs, $21,581,570; excise, $5,884,860; public works, including railways and canals, $2,711,134; post-office, $1,587,888. The expenditure for 1882 was $27,067,103. The chief items of export were, in 1882:

| | | | |
|---|---|---|---|
| Agricultural products .... | $31,075,712 | Fisheries..... | $7,682,079 |
| Animals, and produce of.. | 20,454,759 | Manufactured articles ..... | 3,329,598 |
| Wood, timber, lumber, &c. | 23,991,055 | Products of the mines ..... | 3,013,573 |

Of the imports 50½ millions came from Great Britain, 48 millions from the United States, and 14 millions from all other countries. Leading imports were: Cotton manufactures, 11 millions; flour and grain, 7 millions; iron and steel manufactures, 12 millions; and woolen manufactures, 9 millions.

Of the exports $45,273,930 went to Great Britain, 43 millions to the United States, and 14 millions to all other countries. The Canadian lumber trade is of great extent and value, and from 94 to 96 per cent. of its aggregate exports go to the United States.

The merchant shipping of the Dominion, January 1, 1882, numbered 7,312 vessels, measuring 1,260,777 tons, and is steadily increasing. Value of merchant shipping, $39,326,880. The canals of Canada are extensive and profitable, and are managed by the Government. The Welland canal charges 20 cents per ton on grain and other bulky freights, and 2½ cents a ton on each vessel.

The Canadian banks held $67,000,000 in deposits, with a note of issue of $17,500,000; coin $5,500,000; and bills discounted, $135,000,000.

The census of the Dominion in 1881 showed a population of 4,352,080, against 3,686,596 in 1871, a gain of 18 per cent. The Indian population of Canada, as reported by the Superintendent of Indian Affairs, in 1877, was 99,650.

The average of duty on all imported commodities, subject to duty, was 25.82 per cent. in 1882. Expense of collecting customs revenue, 3.87 per cent.

The census of 1881 returned the amount of capital invested in manufacturing industries at $165,302,623. The average wages of Canadian mechanics was $350,00 yearly, in 1881. Miles of railway in operation, 1882, 8,069; miles under construction, 3,189. Receipts, passenger traffic, 1882, $10,018,478; freight traffic, $17,729,945; total receipts, $29,027,790.

### Aggregate Issues of Paper Money in War Times by the United States in the Revolution and Rebellion, the French during the Revolution, and the Confederate States.

| | Population. | Amount Issued | Amount p'r head |
|---|---|---|---|
| Continental money... | 3,000,000 in 1780. | $ 359,546,825 | $119 84 |
| French assignats..... | 26,500,000 (France in 1790.) | 9,115,600,000 | 343 98 |
| Confederate Currency | 9,103,332 (11 Confederate States, 1860. | 654,465,963 | 71 89 |
| Greenbacks and national bank-notes.... | 31,443,321 (U. S. in 1860.) | 750,820,228 | 23 87 |

## THE RAILROADS OF THE WORLD IN 1882.

| Countries. | | Miles. |
|---|---|---|
| 1. North America. | United States (1883). | 117,717 |
| | Canada | 7,894 |
| | Mexico | 2,219 |
| Total | North America | 127,830 |
| 2. Middle America. | Costa Rica | 105 |
| | Cuba (Spanish) | 858 |
| | Honduras | 56 |
| | Jamaica (British) | 25 |
| | Nicaragua | 34 |
| | Trinidad | 16 |
| Total | Middle America | 1,094 |
| 3. South America. | Argentine Republic | 1,619 |
| | Bolivia | 31 |
| | Brazil | 1,899 |
| | Chili | 1,193 |
| | Colombia, U. S. of | 99 |
| | Ecuador | 75 |
| | Guiana (British) | 21 |
| | Paraguay | 44 |
| | Peru | 2,030 |
| | Uruguay | 235 |
| | Venezuela | 70 |
| Total | South America | 7,316 |
| 4. Europe. | Austria-Hungary | 11,738 |
| | Belgium | 2,597 |
| | Denmark | 978 |
| | France | 17,027 |
| | Germany | 21,565 |
| | Great Britain and Ireland | 18,168 |
| | Greece | 7 |
| | Italy | 5,410 |
| | Netherlands | 1,227 |
| | Norway | 946 |
| | Portugal | 1,039 |
| 4. Europe. (Continued) | Roumania | 916 |
| | Russia | 14,067 |
| | Spain | 3,849 |
| | Sweden | 3,836 |
| | Switzerland | 1,636 |
| | Turkey | 889 |
| Total | Europe | 105,895 |
| 5. Asia. | Ceylon (British) | 136 |
| | China | ..... |
| | India (British) | 9,872 |
| | Japan | 96 |
| | Java (Dutch) | 3,493 |
| | Philippines (Spanish) | 279 |
| | Turkey in Asia | 250 |
| Total | Asia | 14,131 |
| 6. Africa. | Algeria (French) | 804 |
| | Cape Colony (British) | 905 |
| | Egypt | 942 |
| | Mauritius | 66 |
| | Namaqualand | 95 |
| | Natal (British) | 101 |
| | Tunis | 155 |
| Total | Africa | 3,068 |
| 7. Austra'ia | New South Wales | 1,183 |
| | New Zealand | 1,258 |
| | Queensland | 801 |
| | South Australia | 832 |
| | Tasmania | 178 |
| | Victoria | 1,247 |
| | Western Australia | 93 |
| Total | Australasia | 5,592 |
| Grand Total | | 264,826 |

**Railway Construction in the United States in 1882.**—During the Calendar year 1882, there were constructed 10,904 miles of new railways within the United States, as follows: New England, 60 miles; Middle States, 1,281 miles; Southern States, 2,241 miles; Western States, 6,302 miles; Pacific States and Territories, 1,020 miles. This exceeds the mileage built in 1881, by 2,301 miles.

## QUICK PASSAGES OF OCEAN STEAMERS.

| | Miles. | Steamer. | Date. | D. | H. | M |
|---|---|---|---|---|---|---|
| New York to Queenstown | 2,950 | Arizona | Sept., 1881 | 7 | 7 | 48 |
| New York to Queenstown | 2,950 | Arizona | June, 1879 | 7 | 9 | 23 |
| New York to Queenstown | 2,950 | Britannic | Dec., 1876 | 7 | 12 | 46 |
| New York to Queenstown | 2,950 | City of Berlin | Oct., 1875 | 7 | 15 | 48 |
| Queenstown to New York | 2,950 | City of Berlin | Sept., 1875 | 7 | 18 | 02 |
| New York to Queenstown | 2,950 | Russia | July, 1869 | 8 | 6 | 30 |
| Queenstown to New York | 2,950 | Russia | June, 1869 | 8 | 2 | 58 |
| Liverpool to New York | 3,050 | Russia | 1869 | 8 | 8 | 12 |
| Philadelphia to Queenstown | 3,010 | Illinois | Dec., 1876 | 8 | 18 | 13 |
| New York to Havana | 1,225 | City of Vera Cruz | Aug., 1876 | 4 | 0 | 43 |
| Havana to New York | 1,225 | City of New York | May, 1875 | 3 | 10 | 7 |
| New York to Aspinwall | 2,300 | Henry Chauncey | 1875 | 6 | 14 | .. |
| Aspinwall to New York | 2,300 | Henry Chauncey | 1875 | 6 | 5 | 30 |
| San Francisco to Yokohama | 4,764 | City of Peking | —— | 15 | 9 | .. |
| Yokohama to San Francisco | 4,764 | Oceanic | 1876 | 14 | 13 | .. |

## THE TELEGRAPHS OF THE WORLD.

| | Date | L'gth of Lines Miles | Number of Offices. | Number of Messages sent | | Date | L'gth of Lines Miles | Number of Offices. | Number of Messages sent |
|---|---|---|---|---|---|---|---|---|---|
| Algeria, French | 1881 | 4,212 | 106 | 1,007,000 | Guatemala | 1881 | 1,160 | 63 | 222,000 |
| Argentine Rep'c | 1881 | 7,303 | 485 | 291,000 | Hawaiian Isids. | 1880 | 30 | ..... | ..... |
| Australasia | 1880 | 27,831 | 675 | ..... | Honduras | ..... | 649 | ..... | ..... |
| Australia: | ..... | ..... | ..... | ..... | India, British | 1880 | 20,408 | 239 | 1,431,000 |
| New So. Wales | 1880 | 7,955 | ..... | ..... | Indies, Dutch | 1880 | 3,644 | 82 | 391,000 |
| Queensland | 1880 | 5,768 | ..... | ..... | Italy | 1881 | 16,602 | 1,633 | 6,250,000 |
| So. Australia | 1880 | 4,754 | ..... | ..... | Jamaica | 1881 | 470 | 32 | ..... |
| West Australia | 1880 | 1,555 | ..... | ..... | Japan | 1880 | 3,929 | 125 | 1,272,756 |
| Victoria | 1880 | 3,215 | ..... | ..... | Luxembourg | 1881 | 192 | 23 | 84,000 |
| New Zealand | 1880 | 3,706 | ..... | ..... | Mexico | 1881 | 10,578 | 363 | 745,000 |
| Tasmania | 1880 | 878 | ..... | ..... | Montenegro | ..... | 275 | 11 | ..... |
| Austria-Hung'y | 1881 | 31,121 | 3,598 | 8,865,000 | Netherlands | 1881 | 2,448 | 203 | 3,282,000 |
| Belgium | 1881 | 3,535 | 827 | 3,791,000 | Nicaragua | 1881 | 400 | ..... | ..... |
| Bolivia | ..... | 475 | 15 | ..... | Norway | 1881 | 4,676 | 132 | 847,000 |
| Brazil | 1881 | 4,657 | 131 | 254,000 | Orange Fr. State | ..... | 1,274 | ..... | ..... |
| British Columb'a | ..... | 642 | ..... | ..... | Paraguay | 1878 | 44 | ..... | ..... |
| Bulgaria | 1881 | 1,495 | 37 | 280,000 | Persia | 1879 | 3,623 | 78 | 500,000 |
| Canada | 1881 | 10,994 | 830 | 52,000 | Peru | 1880 | 1,374 | 34 | 111,000 |
| Cape Good Hope | 1880 | 3,140 | ..... | ..... | Philippines | 1880 | 713 | 37 | ..... |
| Ceylon | 1880 | 813 | ..... | ..... | Porto Rico | ..... | 466 | ..... | ..... |
| Chili | 1880 | 5,714 | 118 | 258,000 | Portugal | 1880 | 2,713 | 196 | 1,121,000 |
| China | 1881 | 24 | ..... | ..... | Roumania | 1881 | 3,297 | 102 | 1,150,000 |
| Cochin China, French | 1878 | 1,249 | ..... | 32,000 | Russia | 1880 | 53,736 | 2,516 | 4,710,120 |
| Colombia | 1880 | 1,839 | 36 | 150,204 | Servia | 1879 | 1,341 | 67 | 233,000 |
| Costa Rica | ..... | 451 | 16 | ..... | Spain | 1880 | 10,013 | 354 | 2,222,000 |
| Cuba | 1880 | 2,796 | 187 | ..... | Sweden | 1881 | 5,195 | 171 | 1,118,000 |
| Denmark | 1880 | 2,190 | 132 | 1,125,000 | Switzerland | 1880 | 4,114 | 1,034 | 3,130,000 |
| Ecuador | 1879 | 210 | 10 | ..... | Tunis | ..... | 590 | 10 | ..... |
| Egypt | 1878 | 4,872 | 103 | ..... | Turkey | 1881 | 17,085 | 417 | 1,344,000 |
| France | 1881 | 45,878 | 5,481 | 19,466,000 | United States | 1882 | 143,040 | 13,538 | 51,942,247 |
| Germany | 1881 | 45,070 | 7,366 | 17,507,000 | Uruguay | 1878 | 654 | 21 | 38,310 |
| Great Britain | 1882 | 26,289 | 5,443 | 31,345,861 | Venezuela | ..... | 334 | ..... | ..... |
| Greece | 1880 | 1,000 | 88 | 397,000 | Total miles | | 550,841 | | |

## THE WORLD'S PRODUCTION OF COAL, IRON, AND STEEL.

| Countries. | Coal area in sq. miles | 1. Mineral Coal. | | 2. Cast or Pig Iron. | | 3. Steel, 1879. | |
|---|---|---|---|---|---|---|---|
| | | Years | Tons of 2,240 lbs. | Years | Tons of 2,240 lbs. | Tons of 2,240 lbs. Ingots. | Tons of 2,240 lbs. Rails. |
| Great Britain | 11,900 | 1879 | 133,808,000 | 1879 | 5,995,337 | 834,511 | 509,786 |
| United States | 192,000 | 1879 | 59,808,398 | 1879 | 2,741,853 | 829,439 | 610,682 |
| Germany | 1,770 | 1879 | 42,631,729 | 1879 | 2,161,102 | 450,000 | 350,000 |
| France | 2,086 | 1879 | 17,104,485 | 1879 | 1,344,759 | 314,691 | 247,000 |
| Belgium | 510 | 1878 | 14,839,175 | 1879 | 493,544 | 100,000 | 75,000 |
| Austria-Hungary | 1,800 | 1879 | 14,378,605 | 1879 | 469,218 | 100,000 | 75,000 |
| China | ..... | 1879 | 3,000,000 | ..... | ..... | ..... | ..... |
| Russia | 30,000 | 1878 | 1,709,269 | 1878 | 409,633 | 50,000 | 54,479 |
| Australia | ..... | 1878 | 1,575,926 | 1877 | 2,000 | ..... | ..... |
| Canada | ..... | 1877 | 1,000,000 | 1879 | 22,500 | ..... | ..... |
| Sweden | ..... | 1878 | 90,000 | 1878 | 333,496 | 152,000 | ..... |
| Spain | 3,500 | 1878 | 765,000 | 1872 | 73,000 | ..... | ..... |
| India | 2,000 | 1878 | 4,000,000 | 1877 | 12,560 | ..... | ..... |
| Turkey | ..... | ..... | 150,000 | 1877 | 4,300 | ..... | ..... |
| Italy | ..... | 1878 | 220,000 | 1877 | 45,000 | ..... | ..... |
| Switzerland | ..... | ..... | ..... | 1877 | 6,500 | ..... | ..... |
| Mexico | ..... | ..... | ..... | 1877 | 7,500 | ..... | ..... |
| Japan | 5,000 | 1879 | 600,000 | 1877 | 7,400 | ..... | ..... |
| Vancouver Island | ..... | 1878 | 228,974 | ..... | ..... | ..... | ..... |
| Nova Scotia | ..... | 1878 | 788,000 | ..... | ..... | ..... | ..... |
| All other countries | ..... | ..... | 1,000,000 | ..... | 10,000 | 20,000 | ..... |
| Total | ..... | ..... | 297,697,561 | ..... | 14,140,332 | 2,850,641 | 1,921,947 |

## RATE OF MORTALITY.—EXPECTATION OF LIFE AT ALL AGES.

*The Carlisle Tables, showing how many persons out of* 10.000 *will annually die, on the average, until all are deceased; also, the expectation of life at all ages.*

| Age. | Number Alive. | Deaths each year. | Expectation. Years. | Age. | Number Alive. | Deaths each year. | Expectation. Years. |
|---|---|---|---|---|---|---|---|
| Birth. | 10,000 | 1,539 | 38.72 | 53 | 4.211 | 68 | 18.97 |
| 1 | 8,461 | 682 | 44.68 | 54 | 4.143 | 70 | 18.28 |
| 2 | 7,779 | 505 | 47.54 | 55 | 4,073 | 73 | 17.60 |
| 3 | 7,274 | 276 | 49.81 | 56 | 4,000 | 76 | 16.90 |
| 4 | 6,998 | 201 | 50.75 | 57 | 3,924 | 82 | 16.20 |
| 5 | 6,797 | 121 | 51.24 | 58 | 3.842 | 93 | 15.54 |
| 6 | 6,676 | 82 | 51.16 | 59 | 3,749 | 106 | 14.91 |
| 7 | 6,594 | 58 | 50.80 | 60 | 3.633 | 122 | 14.33 |
| 8 | 6,536 | 43 | 50.24 | 61 | 3,521 | 126 | 13.81 |
| 9 | 6,493 | 33 | 49.57 | 62 | 3,395 | 127 | 13.31 |
| 10 | 6,460 | 29 | 48.82 | 63 | 3,268 | 125 | 12.80 |
| 11 | 6,431 | 31 | 48.03 | 64 | 3,143 | 125 | 12.29 |
| 12 | 6,400 | 32 | 47.27 | 65 | 3.018 | 124 | 11.80 |
| 13 | 6,368 | 33 | 46.50 | 66 | 2.894 | 123 | 11.30 |
| 14 | 6,335 | 35 | 45.74 | 67 | 2,771 | 123 | 10.74 |
| 15 | 6,300 | 39 | 45.00 | 68 | 2,648 | 123 | 10.22 |
| 16 | 6,261 | 42 | 44.27 | 69 | 2,525 | 124 | 9.70 |
| 17 | 6,219 | 43 | 43.57 | 70 | 2,401 | 124 | 9.14 |
| 18 | 6,176 | 43 | 42.87 | 71 | 2.277 | 134 | 8.64 |
| 19 | 6,133 | 43 | 42.16 | 72 | 2,143 | 146 | 8.15 |
| 20 | 6,090 | 43 | 41.45 | 73 | 1.997 | 156 | 7.71 |
| 21 | 6,047 | 42 | 40.74 | 74 | 1,841 | 166 | 7.32 |
| 22 | 6,005 | 42 | 40.03 | 75 | 1.675 | 160 | 7.00 |
| 23 | 5,963 | 42 | 39.30 | 76 | 1,515 | 156 | 6.70 |
| 24 | 5,921 | 42 | 38.59 | 77 | 1,359 | 146 | 6.40 |
| 25 | 5,879 | 43 | 37.85 | 78 | 1,213 | 132 | 6.11 |
| 26 | 5,836 | 43 | 37.13 | 79 | 1,081 | 128 | 5.80 |
| 27 | 5,793 | 45 | 36.40 | 80 | 953 | 116 | 5.50 |
| 28 | 5,748 | 50 | 35.69 | 81 | 837 | 112 | 5.20 |
| 29 | 5,698 | 56 | 35.00 | 82 | 725 | 102 | 4.92 |
| 30 | 5,642 | 57 | 34.33 | 83 | 623 | 94 | 4.65 |
| 31 | 5,585 | 57 | 33.70 | 84 | 529 | 84 | 4.39 |
| 32 | 5,528 | 56 | 33.02 | 85 | 445 | 78 | 4.12 |
| 33 | 5,472 | 55 | 32.35 | 86 | 367 | 71 | 3.90 |
| 34 | 5,417 | 55 | 31.68 | 87 | 296 | 64 | 3.70 |
| 35 | 5,362 | 55 | 31.00 | 88 | 232 | 51 | 3.39 |
| 36 | 5,307 | 56 | 30.31 | 89 | 181 | 39 | 3.40 |
| 37 | 5,251 | 57 | 29.63 | 90 | 142 | 37 | 3.29 |
| 38 | 5,194 | 58 | 28.95 | 91 | 105 | 30 | 3.27 |
| 39 | 5,136 | 61 | 28.27 | 92 | 75 | 21 | 3.37 |
| 40 | 5,075 | 66 | 27.60 | 93 | 54 | 14 | 3.50 |
| 41 | 5,009 | 69 | 26.97 | 94 | 40 | 10 | 3.52 |
| 42 | 4,940 | 71 | 26.33 | 95 | 30 | 7 | 3.53 |
| 43 | 4.869 | 71 | 25.71 | 96 | 23 | 5 | 3.45 |
| 44 | 4,798 | 71 | 25.08 | 97 | 18 | 4 | 3.27 |
| 45 | 4,727 | 70 | 24.45 | 98 | 14 | 3 | 3.07 |
| 46 | 4,657 | 69 | 23.81 | 99 | 11 | 2 | 2.77 |
| 47 | 4,588 | 67 | 23.16 | 100 | 9 | 2 | 2.27 |
| 48 | 4,521 | 63 | 22.50 | 101 | 7 | 2 | 1.80 |
| 49 | 4,458 | 61 | 21.81 | 102 | 5 | 2 | 1.30 |
| 50 | 4,397 | 59 | 21.10 | 103 | 3 | 2 | 0.83 |
| 51 | 4,338 | 62 | 20.39 | 104 | 1 | 1 | 0.50 |
| 52 | 4,276 | 65 | 19.68 | | | | |

The rate of mortality of males of all ages is 1 in 40; and of females 1 in 42, nearly. The expectation of life is thus reckoned at about 5 per cent longer for women than for men.

## DEBTS, REVENUES, EXPENDITURES, AND COMMERCE OF NATIONS.

| Countries. | Public Debt. | Revenue. | Expenditures. | Imports. | Exports. |
|---|---|---|---|---|---|
| Argentine Rep | $ 68,416,043 | $20,683,537 | $20,663,337 | $ 34,910,290 | $ 44,041,131 |
| Austria proper | 1,419,096,072 | 186,776,170 | 202,035,039 | ..... | ..... |
| Austria-Hung. | 205,999,970 | 60,000,000 | 58,845,695 | 258,450,000 | 204,800,000 |
| Belgium | 232,684,553 | 50,048,972 | 49,045,128 | 258,504,000 | 222,920,400 |
| Bolivia | 17,500,000 | 2,929,574 | 4,505,504 | 5,750,000 | 5,000,000 |
| Brazil | 368,351,139 | 72,548,454 | 67,789,297 | 88,045,520 | 104,232,800 |
| Canada | 112,248,378 | 22,700,000 | 24,100,000 | 93,200,000 | 89,851,328 |
| Chili | 50,677,600 | 21,294,383 | 22,052,187 | 39,050,197 | 37,139,961 |
| China | 3,200,000 | 230,000,000 | ..... | 105,000,000 | 114,000,000 |
| Colombia | 15,399,304 | 3,114,619 | 2,779,410 | 6,949,028 | 9,994,386 |
| Denmark | 52,000,000 | 13,464,066 | 13,074,620 | 50,311,240 | 33,933,640 |
| Ecuador | 17,500,000 | 20,800,000 | 21,500,455 | 7,596,264 | 3,913,536 |
| Egypt | 450,540,000 | 54,820,818 | 54,737,670 | 29,000,000 | 68,000,000 |
| France | 4,695,600,000 | 548,605,716 | 589,334,162 | 882,360,000 | 961,540,000 |
| Germany | 30,000,000 | 135,584,249 | 135,000,000 | 918,850,000 | 608,200,000 |
| Gt.Britain & Ir | 3,888,907,980 | 398,825,180 | 412,017,475 | 1,969,695,885 | 1,263,883,010 |
| Greece | 98,012,000 | 7,765,360 | 7,832,768 | 24,073,400 | 15,097,000 |
| Guiana | 460,000 | 1,580,000 | 4,580,000 | 1,811,770 | 2,241,040 |
| Hawaiian Islds | 548,022 | 504,095 | 460,000 | 1,682,000 | 2,090,000 |
| Hungary prop. | 274,358,915 | 106,069,258 | 116,902,036 | ..... | ..... |
| India, British | 576,634,330 | 272,649,885 | 292,503,145 | 244,000,000 | 325,600,000 |
| Italy | 1,977,117,845 | 279,550,000 | 278,121,440 | 265,899,000 | 213,371,000 |
| Japan | 145,000,000 | 63,120,600 | 62,993,850 | 24,087,515 | 27,669,465 |
| Luxembourg | 2,400,000 | 1,438,660 | 1,409,344 | ..... | ..... |
| Mexico | 395,500,000 | 23,807,671 | 24,891,522 | 29,062,407 | 31,659,151 |
| Netherlands | 391,242,322 | 43,973,345 | 48,785,061 | 305,416,000 | 226,750,000 |
| Norway | 13,526,128 | 11,364,220 | 10,726,500 | 52,017,280 | 33,933,640 |
| Paraguay | 12,098,417 | 609,000 | 750,000 | 565,595 | 607,653 |
| Peru | 213,482,680 | 29,801,195 | 33,755,375 | ..... | 37,500,000 |
| Persia | No debt. | 8,240,000 | 8,750,000 | 5,625,000 | 2,813,000 |
| Portugal | 428,977,613 | 29,568,816 | 29,720,336 | 38,131,520 | 26,448,600 |
| Roumania | 90,000,000 | 19,578,885 | 19,578,885 | 16,200,000 | 28,440,000 |
| Russia | 2,020,092,043 | 489,377,280 | 430,557,403 | 365,426,400 | 286,484,000 |
| Servia | 5,000,000 | 2,968,422 | 2,924,779 | 6,197,000 | 5,500,000 |
| Siam | ..... | 4,000,000 | 4,000,000 | 7,100,000 | 8,300,000 |
| Spain | 2,401,612,001 | 131,500,000 | 131,824,000 | 66,670,000 | 75,564,000 |
| Sweden | 39,241,142 | 23,563,201 | 21,872,193 | 85,906,800 | 62,532,960 |
| Switzerland | 6,225,000 | 8,297,480 | 8,524,400 | Not given. | Not given. |
| Turkey | 1,212,772,200 | 88,764,050 | 140,000,000 | 72,430,000 | 51,000,000 |
| United States | 2,028,648,111 | 257,763,879 | 236,964,327 | 466,872,846 | 739,107,578 |
| Uruguay | 43,615,000 | 6,965,683 | 6,800,000 | 21,917,800 | 16,953,000 |
| Venezuela | 62,659,687 | 3,549,000 | 3,042,500 | 12,000,000 | 17,000,000 |
| Total debts | $24,097,349,195 | | | | |

## THE ARMIES OF THE WORLD.

| COUNTRIES. | Population. | Regular Army. | War Footing. | Annual Cost of Army. | Cost per head. | Per ct total expenditure |
|---|---|---|---|---|---|---|
| Austria-Hung'y | 37,350,000 | 296,218 | 1,021,692 | $50,680,000 | $1 35 | 86.12 |
| Argentine Rep | 1,812,490 | 8,283 | ..... | *4,514,018 | *2 49 | *21.84 |
| Belgium | 5,336.185 | 46,277 | 103,683 | 8,787,909 | 1 64 | 17.91 |
| Bolivia | 2,000,000 | 4,022 | ..... | 1,126,916 | 56 | 25.01 |
| Brazil | 11,108,291 | 16,500 | 32,000 | 10,862,496 | 97 | 16.02 |
| Canada | 3,672.116 | 3,000 | 655,000 | 1,013,944 | 27 | 4.20 |
| Chili | 2,333,568 | 3,516 | 28,274 | ..... | ..... | ..... |
| China | 433 500,000 | 700,000 | 1,260,000 | ..... | ..... | ..... |
| Colombia | 2,774,000 | 2,600 | 30,000 | 288,000 | 10 | 10.36 |
| Denmark | 1,903,000 | 35,703 | 50,000 | 2,406,109 | 1 26 | 18.40 |
| Egypt | 17,100,000 | 62,920 | 128,000 | *4,452,422 | *26 | *8.13 |
| France | 36,905,788 | 470,600 | 1,750,000 | 100,007,623 | 2 70 | 19.25 |
| Germany | 42,727,360 | 419,659 | 1,034,524 | 92,572,403 | 2 16 | 68.57 |
| Great Britain | 34,242,966 | 133,720 | 370,561 | 65,161,015 | 1 90 | 16.68 |
| Greece | 1,457,894 | 12,397 | 30,000 | 1,494,860 | 1 02 | 19.08 |
| India, British | 191,168,412 | 58,170 | 144,700 | 76,875,960 | 40 | 28.21 |
| Italy | 27,769,475 | 199,577 | 867,509 | 37,983,755 | 1 36 | 13.65 |
| Japan | 34,338,404 | 35,380 | 50,240 | 7,506,000 | 21 | 11.91 |
| Luxembourg | 205,158 | 513 | ..... | 100,480 | 48 | 7.12 |
| Mexico | 9,276,079 | 22,387 | ..... | *10,554,745 | *1 13 | *42.40 |
| Netherlands | 3,865,456 | 61,803 | 160,000 | 10,266,990 | 2 65 | 21.04 |
| Norway | 1,807,555 | 12,750 | 18,000 | 1,480,760 | 81 | 13.80 |
| Persia | 6,000,000 | 28,400 | 108,500 | 3,400,000 | 56 | 37.71 |
| Peru | 3,000,000 | 13,200 | ..... | ..... | ..... | ..... |
| Portugal | 4,057,538 | 35,733 | 75,000 | 4,342,928 | 1 07 | 14.61 |
| Roumania | 5,073,000 | 130,158 | 144,668 | 3,310,198 | 65 | 16.90 |
| Russia | 72,392,927 | 787,900 | 1,671,674 | 144,215,615 | 1 99 | 35.12 |
| Servia | 1,366,923 | 14,150 | 150,000 | 869,138 | 63 | 29.71 |
| Spain | 16,526.511 | 330,000 | 400,000 | 49,146,491 | 2 97 | 37.28 |
| Sweden | 4,429,713 | 36,495 | 156,970 | 3,579,940 | 80 | 16.36 |
| Switzerland | 2,759,854 | 106,102 | 203,262 | 2,419,213 | 87 | 28.37 |
| Turkey | 9,573,000 | 157,667 | 618,100 | 24,763,095 | 2 58 | 17.68 |
| United States | 50,152,866 | 26,914 | †3,759,693 | 37,082,735 | 95 | 15.53 |
| Uruguay | 445,000 | 4,060 | 24,000 | *2,364,100 | *5 31 | *34.76 |
| Venezuela | 1,784,197 | 5,494 | ..... | ..... | ..... | ..... |

NOTE.—The last column shows the ratio which the military expenditure bears to the total annual expenditure of each nation.

* Army and Navy. † Militia force, *plus* the regular army.

## THE NAVIES OF THE WORLD.

| COUNTRIES. | No. of Vessels | No. of Men. | Cost of Navy. | COUNTRIES. | No. of Vessels | No. of Men. | Cost of Navy. |
|---|---|---|---|---|---|---|---|
| Argentine Rep. | 28 | 3,135 | $ 842,362 | Italy | 66 | 11,880 | $7,543,388 |
| Austria-Hung'y | 68 | 6,319 | 4,705,095 | Japan | 21 | 3,944 | 2,700,000 |
| Belgium | 10 | 172 | ..... | Mexico | 4 | ..... | *10,554,745 |
| Bolivia | 37 | ..... | ..... | Netherlands | 105 | 4,996 | 5,780,216 |
| Brazil | 63 | 6,184 | 9,994,147 | Norway | 119 | 4,342 | 652,340 |
| Canada | 7 | ..... | ..... | Peru | 18 | ..... | ..... |
| Chili | 15 | 840 | ..... | Portugal | 37 | 3,853 | 1,585,494 |
| China | 38 | ..... | ..... | Roumania | 9 | 266 | ..... |
| Denmark | 33 | 1,125 | 1,200,000 | Russia | 223 | 30,039 | 20,030,704 |
| Egypt | 14 | ..... | ..... | Spain | 138 | 14,648 | 6,536,315 |
| France | 226 | 50,517 | 33,178,699 | Sweden | 141 | 6,141 | 1,352,792 |
| Germany | 60 | 8,051 | 1,192,325 | Turkey | 170 | 6,000 | ..... |
| Gt. Britain & Ir. | 531 | 81,447 | 56,445,000 | United States | 146 | 8,684 | 14,077,974 |
| Greece | 21 | 652 | 391,978 | | | | |

* Army and Navy.

## MERCHANT SHIPPING OF THE WORLD IN 1876.

| COUNTRIES. | Sailing Vessels. | Tonnage. | Steam Vessels. | Tonnage. | Total Tonnage. |
|---|---|---|---|---|---|
| British | 20,265 | 5,807,365 | 3,299 | 3,362,992 | 9,170,357 |
| United States | 7,288 | 2,390,521 | 605 | 789,728 | 3,180,249 |
| Norwegian | 4,749 | 1,410,903 | 122 | 55,874 | 1,466,777 |
| Italian | 4,601 | 1,292,076 | 114 | 97,582 | 1,389,658 |
| German | 3,456 | 875,995 | 226 | 226,888 | 1,102,853 |
| French | 3,858 | 725,048 | 314 | 334,334 | 1,059,382 |
| Spanish | 2,915 | 557,320 | 230 | 176,250 | 733,570 |
| Greek | 2,121 | 426,905 | 11 | 7,133 | 434,038 |
| Dutch | 1,432 | 399,993 | 126 | 134,600 | 534,593 |
| Swedish | 2,121 | 399,128 | 219 | 88,660 | 487,788 |
| Russian | 1,785 | 391,952 | 151 | 105,962 | 497,914 |
| Austrian | 983 | 338,684 | 78 | 81,269 | 419,953 |
| Danish | 1,348 | 188,953 | 87 | 60,697 | 249,650 |
| Portuguese | 456 | 107,016 | 26 | 22,277 | 129,293 |
| South American | 273 | 95,459 | 81 | 59,263 | 154,722 |
| Central Ameri'n | 153 | 57,944 | 6 | 3,132 | 61,076 |
| Turk. & Egypt'n | 305 | 48,289 | 30 | 28,264 | 76,553 |
| Belgian | 54 | 23,344 | 35 | 40,700 | 64,044 |
| Asiatic | 42 | 16,019 | 11 | 10,877 | 26,996 |
| Liberian | 3 | 454 | ... | ..... | 454 |

## NATIONAL DEBTS, EXPENDITURE, AND COMMERCE, PER CAPITA, OF NATIONS.

| COUNTRIES. | Debt per head. | Annual expenditure per head. | Annual imports per head. | Annual exports per head. |
|---|---|---|---|---|
| Argentine Republic | $39.07 | $12.04 | $20.31 | $25.66 |
| Austria-Hungary | 5.73 | 1.63 | 7.19 | 5.70 |
| Austria proper | 65.26 | 9.29 | .... | .... |
| Hungary proper | 17.68 | 7.53 | .... | .... |
| Belgium | 48.08 | 10.13 | 53.41 | 46.06 |
| Bolivia | 10.04 | 2.58 | 3.30 | 2.08 |
| Brazil | 36.43 | 6.70 | 8.71 | 10.31 |
| Canada | 31.16 | 6.69 | 25.87 | 24.94 |
| Chili | 24.49 | 10.66 | 18.21 | 17.95 |
| Colombia | 5.22 | .94 | 2.35 | 3.38 |
| Denmark | 27.19 | 6.83 | 26.31 | 17.95 |
| Ecuador | 20.20 | 24.36 | 8.77 | 4.51 |
| Egypt | 85.82 | 10.42 | 5.52 | 12.94 |
| France | 127.23 | 14.07 | 24.17 | 26.05 |
| Germany | .70 | 3.15 | 21.54 | 14.21 |
| Prussia | 10.55 | 6.33 | .... | .... |
| Great Britain & Ireland | 114.62 | 12.35 | 59.11 | 40.59 |
| Greece | 27.50 | 5.35 | 16.49 | 10.30 |
| India, British | 3.01 | 1.42 | .93 | 1.48 |
| Italy | 71.94 | 10.12 | 9.67 | 8.85 |
| Mexico | 42.63 | 2.68 | 3.13 | 3.41 |
| Netherlands | 101.21 | 11.37 | 71.27 | 67,70 |
| Norway | 7.48 | 5.91 | 28.77 | 18.77 |
| Paraguay | 54.72 | 3.39 | 2.55 | 2.74 |
| Peru | 79.82 | 12.62 | .... | 14.02 |
| Portugal | 96.84 | 6.70 | 8.60 | 5.97 |
| Roumania | 11.82 | 3.85 | 3.19 | 5.60 |
| Russia | 16.33 | 4.83 | 4.22 | 3.23 |
| Servia | 3.61 | 1.43 | 4.58 | 4.06 |
| Spain | 142.71 | 7.83 | 3.96 | 4.48 |
| Sweden | 8.86 | 4.93 | 19.39 | 14.11 |
| Switzerland | 2.25 | 3.08 | .... | .... |
| Turkey | 31.70 | 4.38 | 2.23 | 1.59 |
| United States | 52.56 | 6.13 | 12.64 | 16.92 |
| Uruguay | 98.00 | 15.28 | 49.25 | 38.09 |
| Venezuela | 35.11 | 2.04 | 6.72 | 9.52 |

## UNIVERSITIES AND COLLEGES IN THE UNITED STATES, 1872-76.

The following is a statement of the aggregate number of this class of institutions, with instructors and students, as reported to the Bureau of Education each year, from 1870 to 1876, inclusive:—

| | 1870. | 1871. | 1872. | 1873. | 1874. | 1875. | 1876. |
|---|---|---|---|---|---|---|---|
| Number of institutions | 266 | 290 | 298 | 323 | 343 | 355 | 356 |
| Number of instructors | 2,823 | 2,962 | 3,049 | 3,106 | 3,783 | 3,999 | 3,920 |
| Number of students | 49,163 | 49,827 | 45,617 | 52,053 | 56,692 | 58,894 | 56,481 |

## WEIGHTS AND MEASURES OF THE UNITED STATES AND OTHER COUNTRIES.

Congress adopted the decimal system in the subdivision of moneys. In 1836 a law was passed for regulating the Weights and Measures of the Union, by which the Secretary of the Treasury was directed to supply standards of weights, of length, and of capacity, according to the standards of Great Britain, to the Governors of States and revenue-collectors. Mr. John Quincy Adams had reported, in 1821, in favor of the British standards, because they were in general use, and a change to the decimal principle, as had been effected in France, would be attended with great embarrassment. The measure of time and circular motion is the same in America and Europe. The Troy weight of England was adopted in the United States for weighing coin and bullion. Our apothecaries compound their medicines by the Troy pound and a subdivision of their own. The Avoirdupois weight used in England is also our legal standard for weighing all other articles bought or sold by weight. The British and the United States statute acre, sq. yard, sq. foot, and sq. inch, and the mile, yard, foot, and inch are the same.

Congress retains the *old* English wine gallon as a measure for liquids, and the Winchester bushel for grain, &c., but England has abandoned both, and substituted what she terms the imperial measure, whether for wines, beer, other liquids, or dry goods sold by measure. Her imperial gallon is exactly 1 1-5th of our wine gallon, and measures 277.274 solid inches; our Winchester gallon, abandoned by her, measuring 268.8, or about 8½ cubic inches less; her new bushel is equal to 1.032 of ours. Heaped measure was abolished by law in Scotland two hundred years ago, though not always in practice. McCulloch calls it a barbarous custom. England recognizes it in recent laws, and the United States have sometimes ordered duties to be collected by it.

(U. S.) TROY WEIGHT.—24 grains make 1 pennyweight; 20 pennyweights, 1 ounce; 12 ounces, 1 pound. 1 lb Troy is to 1 lb Avoirdupois as 144 is to 175; or, 5,760 grains make 1 lb Troy, and 7,000 grains 1 lb Avoirdupois.

(U. S.) AVOIRDUPOIS WEIGHT.—[1 drachm, or 27 11-32 grains, equal 1.7712 grammes]; 16 drachms make 1 ounce [equal to 28.3392 grammes]; 16 ounces, 1 pound; 28 pounds, 1 quarter; 4 quarters, 1 hundred weight; 20 hundred weight, or 2,240 lbs., 1 ton.

In Philadelphia and many other places, 2,240 lbs. are generally considered a ton. In the State of New York, unless by special bargain, 2,000 lbs. are a ton. Sales by the pound are the most common; nothing is sold by the cwt. of 112 lbs. In Avoirdupois, 7 lbs. make 1 clove of wool, and 14 lbs. 1 stone. A pack of wool is 240 lbs. In Ohio, when sales are made by the bushel, without a *special* agreement, the following are the legal weights of a bushel: Wheat, 60 lbs.; Indian corn, 56; barley, 48; oats, 39; rye, 56; flax-seed, 56; clover-seed, 64. Corn is usually sold in the Western States 56 lbs. to the bushel. In Boston, 53 lbs. to the bushel of Western corn.

In freights, a ton (by the rules of the New York Chamber of Commerce) is composed of 8 barrels of flour; 22 bushels of grain, peas, or beans, in casks; 36 bushels of grain in bulk, or European salt; 31 bushels W. I. salt; 6 barrels of beef, pork, tallow, or pickled fish; 200 gallons, wine measure, of oil, wine, brandy, or other liquors; 29 bushels of sea-coal; 40 cubic feet of square timber, oak plank, pine, cotton, wool, and bale goods; 2,000 lbs. of bar or pig iron, ashes, and all other heavy goods.

(U. S.) LINEAR MEASURE.—3 barleycorns make 1 inch; 12 inches, 1 foot; 3 feet, 1 yard; 5½ yards, 1 rod or pole; 40 rods, 1 furlong; 8 furlongs, 1 mile. A hand is 4 inches; a fathom, 6 feet; a cubit, 1½ feet; 69½ statute, or 60 sea miles, 1 degree of a great circle of the earth; 3 miles, 1 league.

CLOTH MEASURE.—9 inches make 1 quarter; 4 quarters, 1 yard.

(U. S.) SQUARE MEASURE.—144 square inches make 1 square foot; 9 sq. feet, 1 sq. yard; 30¼ sq. yards, 1 sq. pole; 40 sq. poles, 1 rood; 4 roods, 1 acre; 640 acres, 1 sq. mile.

(U. S.) SOLID MEASURE.—1728 cubic inches make 1 cubic foot; 27 cubic feet, 1 cubic yard; 42 cubic feet, 1 ton of shipping; 40 cubic feet, 1 load of unhewn timber; 50 do., 1 load squared do.

(U. S.) WINE MEASURE.—4 gills make 1 pint; 2 pints, 1 quart; 4 quarts, 1 gallon; 31½ gallons, 1 barrel; 63 gallons, 1 hogshead; 2 hogsheads, 1 pipe; 2 pipes, 1 ton.

(U. S.) DRY, OR WINCHESTER MEASURE.—4 gills, 1 pint = 33.6 cubic inches = 0.55053 French litres; 2 pints, 1 quart = 67 2-5 cub. in. = 1.10106 litres; 4 quarts, 1 gallon = 268.8 cub. in. = 4.40424 litres; 2 gallons, 1 peck = 537.6 cub. in. = 8.80848 litres; 4 pecks, 1 bushel = 2150.42 cub. in. = 35.23392 litres; 5 quarters, 1 wey or load.

The Winchester bushel is 18½ inches wide and 8 inches deep; it contains 2150 2-5 solid inches, being 47 1-5 less than the imperial bushel. Of wheat the bushel is 60 lbs. The barrel of flour contains 5 Winchester bushels, and weighs, net, 196 lbs. The barrel of Indian corn contains 3⅛ bushels. The weight of a gallon of molasses is usually 11 lbs., but sometimes 10 or 12.

BRITISH IMPERIAL (NEW) STANDARD MEASURE, COMPARED WITH WINCHESTER AND WINE MEASURES.—Our extensive dealings with England make it useful for business men to have an explanation of the difference between the imperial measure for liquids and dry goods and our Winchester and wine measures, which latter were formerly used in England. It is greatly to be desired that uniform weights, measures, and coins may soon be used all over the world.

The English coal bushel was a quart larger than our Winchester; but selling coal by measure caused such extensive frauds that it was abolished. It is now sold in Great Britain by weight only.

By the imperial standard, adopted in England in 1825, 1 gill is = to 8.665 solid inches; 4 gills = 1 pint; 2 pints, 1 quart; 4 quarts, 1 gallon, or 277.274 solid inches; 2 gallons, 1 peck; 4 pecks, 1 bushel, or 2218.192 inches; 4 bushels are 1 coom; 2 cooms (8 bushels), 1 quarter.

The quarter of wheat is equal to the quarter of a ton of 2.240 lbs. = 560 lbs.; 70 lbs. in weight are an English bushel of wheat, while 60 lbs. of wheat make our bushel; so that the United States wheat bushel is just 6-7ths of the English, or imperial; and a quarter of wheat in England is equal to 9⅛ bushels in the United States.

The United States grain gallon measures 268.8 solid inches; the wine gallon, 231 inches; the imperial measures 277⅓ in.; 36 of our wine gallons are very nearly equal to 30 imperial gallons. The *obsolete* English ale and beer gallon measured 282 cubic inches.

The imperial standard gallon is a measure that will hold 10 lbs. Avoirdupois of pure (distilled) water, weighed in air at 62 deg. Fahrenheit, the barometer being at 30 degrees.

This is the unit standard, in Great Britain, of capacity for liquids, ale, beer, wine, spirits, and dry goods not measured by heaped measure. Our Winchester gallon weighs 9 lbs. 10 oz. and 1⅞ drachms of pure water.

---

## HOW INTEREST INCREASES.

Very few persons have figured on the difference between six and eight per cent. One dollar loaned for one hundred years at six per cent, with the interest collected annually and added to the principal, will amount to $340. At eight per cent it amounts to $2,203, or nearly seven times as much. At three per cent, the usual rate of interest in England, it amounts to $19.25; whereas at ten per cent, which has been a very common rate in the United States, it is $13,809, or about seven hundred times as much. At twelve per cent it amounts to $84,075, or more than four thousand times as much. At eighteen per cent it amounts to $15,145,007. At twenty-four per cent (which we sometimes hear talked of) it reaches the enormous sum of $2,551,799,404.

## CHRONOLOGICAL TABLE.

*The following is a List of the most important Events in the History of the World, from the Creation to the present Time.*

| | B. C. |
|---|---|
| The Creation | 4008 |
| The deluge of Noah's flood | 2352 |
| The calling of Abraham | 1985 |
| Moses born | 1571 |
| Cecrops founds the kingdom of Athens | 1556 |
| Cadmus carries Phœnician letters into Greece | 1493 |
| The Pentateuch, or first five books of Moses written | 1452 |
| Tyre built | 1252 |
| Carthage founded by the Tyrians | 1233 |
| Destruction of Troy | 1184 |
| Dedication of Solomon's temple at Jerusalem | 1008 |
| Era of the Olympiads began | 776 |
| Era of the building of Rome | 753 |
| Maps and globes introduced into Greece by Anaximander | 600 |
| Tarquin the Proud, the last king of Rome, expelled | 509 |
| Xerxes' expedition against Greece | 481 |
| Ezra restores Jerusalem, seventy weeks of years, or 490 years before the death of our Saviour | 458 |
| The history of the Old Testament closes about | 430 |
| Alexander the Great born | 356 |
| Sun-dial first erected in Rome | 293 |
| Dionysius of Alexandria began his era, being the first who ascertained the solar year to consist of 365 days, 5 hours and 49 minutes | 285 |
| The first Punic war began | 264 |
| Hannibal invades Italy over the Alps | 218 |
| Paper invented in China | 170 |
| The first library formed in Rome | 168 |
| Corinth and Carthage destroyed by the Romans | 146 |
| History of the Apocrypha ends | 135 |
| Julius Cæsar's first descent in Britain | 55 |
| Cæsar defeats Pompey at Pharsalia | 48 |
| Cæsar murdered by Brutus and other conspirators | 44 |
| *The Saviour of the World* born | 5 |

| | A. C. |
|---|---|
| The common Christian era, as settled by Dionysius, began on the 1st of January, Christ being then 4 years old | 1 |
| *Jesus Christ* baptized by John | 29 |
| He suffers at Jerusalem at the 38th year of his age | 33 |
| Claudius Cæsar's expedition to Britain | 43 |
| London became a Roman station | 50 |
| Christianity said to be introduced into Britain | 60 |
| Jerusalem taken and utterly destroyed by Vespasian and Titus | 70 |
| Pompeii and Herculaneum overwhelmed by an eruption of Vesuvius. Pliny the elder dies | 79 |
| Agricola builds his wall between the Forth and the Clyde | 85 |
| Adrian builds a wall between Newcastle and Carlisle | 121 |
| Silk first brought from India | 274 |
| Wines first made in Britain | 276 |
| The Franks, a German nation, settle in Gaul, which from thence was called France | 277 |
| Observation of Sunday enjoined under Contantine, the first Christian emperor of Rome | 321 |
| Constantine removes the seat of empire from Rome to Byzantium, thence called Constantinople | 328 |
| Roman empire divided into eastern and western | 364 |

| | A. C. |
|---|---|
| Europe overrun by the Goths under Alaric | 401 |
| France formed into a kingdom under Pharamond | 420 |
| City of Venice founded | 452 |
| The Mahomeian era of the Hegira, or flight of Mahomet from Mecca begins | 622 |
| England invaded by the Danes | 653 |
| Glass first brought to England | 663 |
| The Britons subdued by the Saxons | 685 |
| Computations from the birth of Christ used in history | 748 |
| Charlemagne founds the western empire | 800 |
| Juries instituted in England | 979 |
| Arithmetical cyphers brought into Europe by Saracens: letters of the alphabet had hitherto been used | 991 |
| Paper made of cotton rags in use | 1000 |
| Danes finally driven out of Scotland | 1040 |
| The conquest of England by William Duke of Normandy | 1066 |
| The tower of London built by him | 1080 |
| First crusade for the recovery of the holy land | 1096 |
| Henry II. of England gains possession of Ireland | 1172 |
| Glass windows in private houses in England | 1180 |
| A conjunction of all the planets at sunrise, 16th September | 1186 |
| Magna Charta signed by King John | 1215 |
| Astronomy and geography revived by the Moors of Spain | 1223 |
| Commons of England first summoned to Parliament | 1264 |
| Parliament regularly held from this year, being the 22d of Edward I | 1293 |
| Turkish empire founded by Ottoman | 1298 |
| Mariner's compass improved by Gioia of Amaldi | 1302 |
| Gunpowder made by a monk at Cologne | 1330 |
| Gold first coined in England by Edward III. | 1344 |
| Edward III. had 4 pieces of cannon at Cressy | 1345 |
| Coals first brought to London | 1357 |
| Wickliffe, the English reformer, flourished | 1369 |
| Canary Islands discovered by a Norman | 1405 |
| Painting in oil invented at Bruges by John Van Eyck | 1410 |
| Algebra introduced into Europe | 1412 |
| Printing invented by Laurence of Haerlem, who died in | 1440 |
| Constantinople taken by the Turks: Greek empire ends | 1453 |
| Glass manufactured in England | 1457 |
| Engraving and etching on copper about | 1460 |
| Printing brought to England by Caxton | 1471 |
| America discovered by Colon or Columbus | 1492 |
| Portuguese sail to India round the Cape of Good Hope | 1497 |
| Shillings first coined in England | 1505 |
| Martin Luther began the Reformation | 1517 |
| First voyage round the world by Magellan's ships | 1522 |
| Reformation introduced into England | 1534 |
| Variation of the compass discovered by Cabot | 1540 |
| Reformation completed in Scotland by John Knox | 1560 |
| Pope Gregory reforms the calendar | 1582 |
| Tobacco first brought to England from Virginia | 1583 |
| Mary Queen of Scotland beheaded by Elizabeth | 1587 |
| Telescopes invented in Germany | 1590 |
| Decimal Arithmetic invented at Bruges | 1602 |
| Union of the crowns of England and Scotland | 1603 |
| Galileo of Florence discovers Jupiter's Satellites | 1610 |
| Thermometers invented by Drebel in Holland | 1610 |
| Logarithms invented by Napier in Scotland | 1614 |
| Circulation of the blood, established by Harvey: this had been suggested in France in 1553 | 1619 |
| Barbadoes the first British settlement | 1625 |
| Barometers invented in Italy by Torricelli | 1643 |

| | A. C. |
|---|---|
| Pendulums applied to clocks by Huigens | 1649 |
| Air-pump invented by Guericke Magdeburg | 1653 |
| Restoration of Charles II. on the 29th of May | 1660 |
| Royal Society of London established | 1662 |
| Tea first used in England | 1666 |
| Newtonian philosophy published | 1686 |
| Land-tax enacted in England | 1689 |
| Bayonets first used by the French | 1693 |
| Bank of England established | 1693 |
| Union of kingdoms of England and Scotland | 1706 |
| New Style introduced into Britain | 1752 |
| Transit of Venus over the Sun, 6th of June | 1756 |
| Cook returns from his first voyage round the world | 1771 |
| Dr. Herschel discovers the planet called by his name | 1781 |
| Dr. Herschel discovers two of its Satellites | 1787 |
| Revolution in France began | 1789 |
| King of France deposed | 1792 |
| United Parliament of Great Britain and Ireland met for the first time, on the 22d of January | 1801 |
| Restoration of Louis 18th, and peace between France and the Allied Powers, 1st of May | 1814 |
| Peace proclaimed in London, June 20 | 1814 |
| Battle of Waterloo, June 18th | 1815 |
| Catholic Emancipation | 1829 |
| Revolution in France, July 29th | 1830 |
| Cholera | 1832 |
| Sir Walter Scott died 21st September | 1832 |
| First Reformed Parliament assembled | 1833 |
| West India Slave Emancipation Bill passed | 1833 |
| American Banks suspend payments, June | 1837 |
| Victoria crowned in Westminster Abbey, June 28th | 1838 |
| Total Abolition of Slavery in all the British Colonies, August 1st | 1838 |
| Insurrection in Canada | 1838 |
| War between Great Britain and China: Squadron of 15 ships of the line sail for China | 1840 |
| Queen Victoria marries Prince Albert of Saxe Cobourg Gotha | 1840 |
| The remains of Napoleon Bonaparte brought from St. Helena, and placed in the Church of the Invalides at Paris | 1840 |
| Union of Upper and Lower Canada | 1841 |
| The President steamship sailed from New York for Liverpool, and was lost on the passage, with 136 persons on board | 1841 |
| Death of W. E. Channing, D.D., the celebrated American author | 1842 |
| Dreadful earthquake among the West India Islands, the town of Point-a-Pitre, in Guadaloupe, completely destroyed, and 5000 persons killed | 1842 |
| Louis Phillipe, king of the French, abdicated | 1848 |
| Louis of Bavaria, abdicated | 1848 |
| Slavery abolished in French Colonies | 1848 |
| Charles Albert of Sardinia, abdicated | 1849 |
| Britannia Tubular Bridge opened | 1850 |
| Napoleon III. declared Emperor of France | 1852 |
| Gold discovered in South Australia | 1852 |
| Napoleon III. marries Eugenie | 1853 |
| Balaclava, charge of the 600 | 1854 |
| Sir John Franklin removed from Navy List | 1854 |
| Gold discovered in Vancouver's Island | 1856 |
| Gold discovered in British Columbia | 1856 |
| Gretna Green marriages abolished | 1856 |
| Sepoy mutiny, India | 1857 |
| Stereotype printing for newspapers | 1857 |
| English and French force capture Canton | 1857 |

| | A. C. |
|---|---|
| Emperor Maximilian executed | 1857 |
| Atlantic telegraph, first message, August 15th | 1858 |
| The Great Eastern launched | 1858 |
| Quito destroyed by an earthquake | 1859 |
| William Walker, filibuster, shot | 1860 |
| Victoria Bridge, Canada, opened | 1860 |
| Frederick William IV, of Prussia, died | 1861 |
| Serfdom abolished in Russia | 1861 |
| The Telephone invented | 1861 |
| Prince Albert died | 1861 |
| Prussian ports blockaded by Denmark | 1864 |
| Peace between Prussia and Denmark | 1864 |
| First Parliament of the Dominion of Canada | 1866 |
| Battle of Sadowa | 1866 |
| Gen. Sir R. Napier defeated the troops of Theodore, King of Abyssinia, at Magdala, January | 1868 |
| George Peabody, the philanthropist, died | 1869 |
| Queen Isabella II. of Spain, abdicated | 1870 |
| Gambetta left Paris in a balloon | 1870 |
| Battles of Vionville, Gravelot, and Sedan | 1870 |
| Charles Dickens died | 1870 |
| Imperial crown of Germany conferred on William of Prussia, | 1870 |
| Battle of Sedan | 1870 |
| Diamonds discovered in South Africa | 1871 |
| Livingstone and H. M. Stanly meet in Africa | 1871 |
| Tunnel under Mount Cenis opened | 1871 |
| Thiers elected President of the French Republic | 1871 |
| Captain Hall of the Polaris, died | 1871 |
| Gold discovered in New Zealand | 1871 |
| William of Prussia proclaimed Emperor of Germany | 1871 |
| The Tuileries destroyed by Communists | 1871 |
| King Amadeus I., of Spain abdicated | 1873 |
| Belfort restored to France | 1873 |
| Death of Napoleon III. | 1873 |
| Mail steamer Atlantic sunk; loss, 700 | 1873 |
| Transit of Venus | 1874 |
| Fiji Islands become British Colonies | 1874 |
| Sultan Abdul Aziz of Turkey, abdicated | 1876 |
| Sultan Murad V. of Turkey, abdicated | 1876 |
| Berlin Conference | 1876 |
| Industrial Exhibition, Brussels | 1876 |
| Escape of Fenian prisoners from West Australia | 1876 |
| Malleable glass produced | 1876 |
| Freedom of the City of London conferred on ex-President Grant | 1877 |
| Zurich cremation of human bodies legalized | 1877 |
| Great Exposition in Paris | 1878 |
| Peace between Russia and Turkey | 1878 |
| England at war with Zulus | 1879 |
| Prince Imperial killed by Zulus | 1879 |
| Lesseps Company begin work on Panama Canal | 1880 |
| Irish Home Rulers silenced by majority in House of Commons | 1881 |
| Bombardment of Alexandria by the British fleet, July 11 | 1882 |
| Italy resumed Specie payments suspended since 1866 | 1883 |
| The Brooklyn and New York Suspension Bridge formerly opened May 24 | 1883 |
| Java and neighboring islands devastated by volcanic eruptions, 100,000 lives lost, August | 1883 |
| Defeat of Egyptian rebels under Osman Digna by the British, March | 1884 |

## CHRONOLOGICAL TABLE OF GEOGRAPHICAL DISCOVERIES.

A. C.

861. Ferne Islands, discovered about this time by a Scandinavian vessel.
871. Iceland, discovered by some Norwegian Chiefs, who were compelled to leave their native country. According to some accounts, it had been visited before this by a Scandinavian pirate, Naddodd.
950. Greenland, discovered by the Icelanders about this period. The first colony established there was destroyed by a pestilence in the 14th century, and by the accumulation of ice between Greenland and Iceland all intercourse was cut off.
1002. Winland dat Gode (Good Wine Land), a part of America, was discovered by the Northmen, Eric and Biorn.
1344. Madeira, the well-known wine-producing island, was discovered by Juan Gonzalez and Tristan Vaz, Portuguese.
1345. Canary Isles, discovered by some Genoese and Spanish seamen, having been known to the ancients.
1364. Guinea, the coast of, discovered by some seamen of Dieppe, about this period.
1418. Porto Santo, discovered by Vaz and Zarco, Portuguese.
1440–1445. Senegal River, discovered by the Portuguese.
1446. Cape Verde, discovered by Denis Fernandez, a Portuguese.
1448. Azores Islands, discovered by Gonzalio Vello, a Portuguese.
1449. Cape Verde Islands, discovered by Antonio de Noli, a Genoese in the service of Portugal.
1471. Island of St. Thomas, under the Equator, discovered.
1484. Congo, discovered by the Portuguese, under Diego Cam.
1484. Cape Bojador, or Nun, doubled for the first time by the Portuguese.
1486. Cape of Good Hope, discovered by Bartholomew Diaz.
1492. Lucayos, or Bahama Islands. These were the first points of discovery by Columbus. San Salvador, one of these islands, was first seen by this great navigator on the 11th or 12th of October in this year.
1492. Cuba, Island of Hispaniola, or St. Domingo, discovered by Columbus in his first voyage.
1493. Jamaica, St. Christopher's Dominica, discovered by Columbus in his second voyage.
1497. Cape of Good Hope, doubled by Vasco di Gama, and the passage to India discovered.
1497. Newfoundland, discovered by John Cnbot, who first called it Prima Vista and Baccalaos.
1498. Continent of America, discovered by Columbus.
1498. Malabar, coast of, discovered by Vasco di Gama.
1498. Mozambique, island of, discovered by Vasco di Gama.
1499. Guiana and Venezuela, discovered by Ojeda and Amerigo Vespucci, under Portuguese flag.
1501. Brazil carefully explored by Amerigo Vespucci.
1501. Labrador and River St Lawrence, discovered by Cortecal, who sailed from Lisbon on a voyage of discovery for the Portuguese.
1502. Gulf of Mexico. Some of the shores of this gulf explored by Columbus on his last voyage.
1502. St. Helena, the island of, discovered by Jean de Nova, a Portuguese.
1506. Ceylon, discovered by the Portuguese. Ceylon was known to the Romans in the time of Claudius.
1506. Madagascar, island of, discovered by Tristan da Cunha, and revisited by the Portuguese navigator, Fernandez Pereira in 1508. This island was first called St. Lawrence, having been discovered on the day of that Saint.
1508. Canada, visited by Thomas Aubert. Known before to fishermen, who had been thrown there by a tempest.
1508. Ascension Isle, discovered by Tristan da Cunha.
1508. Sumatra, island of, discovered by Siqueyra, a Portuguese.
1511. Sumatra, more accurately examined by the Portuguese.

A. C.
1511. Molucca Isles, discovered by the Portuguese.
1511. Sunda Isles, discovered by Abrew, a Portuguese.
1512. Maldives. A Portuguese navigator, wrecked on these islands, found them in occasional possession of the Arabians.
1512. Florida, discovered by Ponce de Leon, a Spanish navigator.
1513. Borneo and Java. The Portuguese became acquainted with these islands.
1513. South Sea. The Great Ocean was discovered this year from the mountains of Darien, by Nuguez de Balboa, and subsequently navigated by Magellan. The supposition of the New World being part of India now ceased.
1515. Peru, discovered by Perez de la Rua.
1516. Rio Janeiro, discovered by Diaz de Solis.
1516. Rio de la Plata, discovered by the same.
1517. China, discovery of, by sea, by Fernand Perez d'Andrada.
1517. Bengal, discovered by some Portuguese thrown on the coast by a tempest.
1518. Mexico discovered by the Spaniards; conquered by Cortes in 1519.
1519. Magellan, Straits of, passed by Magellan with a fleet of discovery fitted out by the Emperor Charles V. The first voyage round the world was undertaken by this navigator; and his vessel performed the enterprise, although the commander perished.
1520. Terra del Fuego, discovered by Magellan.
1521. Ladrone Islands, discovered by Magellan.
1521. Philippines. This archipelago was discovered by Magellan, who lost his life here in a skirmish.
1524. New France. The first voyage of discovery made by the French under Francis the First, one of whose ships, after reaching Florida, coasted along as far as 50 degrees north latitude, and gave to this part the name of new France.
1524. North America, travelled over from Florida to Newfoundland by Verrizana, a Florentine, in the service of France.
1525. New Holland, discovered by the Portuguese about this time; this immense tract was for some time neglected by Europeans, but was visited by the Dutch, at various periods, from 1619 to 1644.
1527. New Guinea, discovered by Sanvedra, a Spaniard, sent from Mexico, by Cortez.
1530. Guinea, the first voyage to, made by an English ship for elephants' teeth.
1534. Canada, visited by Cortier, of St. Malo; a settlement having previously been made in 1528, by Verrizzani, who took possession in the name of Francis I. of France.
1535. California, discovered by Cortez.
1537. Chili, discovered by Diego de Almargo, one of the conquerors of Peru.
1541. Labrador, discovered by a French engineer, Alphonse.
1541. India, the first English ship sailed to, for the purpose of attacking the Portuguese.
1542. Japan, discovered by the Portuguese, Antonio de Meta and Antonio de Peyxoto, who were cast by a tempest on its coast.
1545. Potosi, mines of, discovered by the Spaniards.
1552. Spitzbergen, observed by the English, but mistaken to part of Greenland. Visited by Barentz, a Dutch navigator in search of a north-east passage, in 1596.
1553. White Sea. This sea, which had not been visited since the time of Alfred, was now supposed to be discovered by Chancellor, the English navigator.
1553. Nova Zembla, discovered by Willoughby, an English seaman.
1575. Solomon's Isles, discovered by Mendana, a Spaniard, sent by the Governor of Peru.
1576. Frobisher's Strait, discovered by the English navigator whose name it bears.

A. C.

1576. Greenland, further explored by Frobisher, who also penetrated farther between this country and Labrador.
1577. New Albion, discovered by Drake, who was the second to attempt a voyage round the world, which he performed in three years.
1580. Siberia, discovered by Yermak Timophelevitch, Chief of the Cossacks.
1587. Davies' Straits, discovered by the English navigator whose name it bears, in his voyage for the discovery of a north-west passage.
1594. Falkland Islands, discovered by the English navigator, Sir John Hawkins.
1596. Marquesas, discovered by Mendana, a Spaniard, on his voyage from Peru to found a colony in the Solomon Isles.
1596. Solitary Island, discovered by Mendana on the above-named voyage.
1606. Archipelago del Espirito Santo, discovered by Guirus, a Portuguese sent from Peru. These islands are the cyclades of the Bougainville, and the New Hebrides of Cook.
1606. Otaheite, supposed to be discovered by Guiros, who named it Segittaria.
1607–1610. Hudson's Bay, discovered by the celebrated English navigator, Hudson, on his third voyage. Venturing to pass the winter in this bay on his fourth voyage, he was, with four others, thrown by his sailors into a boat, and left to perish.
1607. Chesapeake Bay, discovered by John Smith.
1615. Straits of Le Maire, discovered with the island of Staten on the east, by Le Maire, a merchant of Amsterdam,, and Schouten, a merchant of Horn.
1616. Cape Horn, doubled by Le Maire and Schouten, Dutch navigators, who called it after the town of which Schouten was a native.
1616. Van Dieman's Land, discovered by the Dutch.
1616. Baffin's Bay, discovered by William Baffin, an Englishman.
1636. Frozen Ocean. In this year the Russians discovered that this ocean washed and bounded the north of Asia. The first Russian ship sailed down the Lena into this sea.
1642. New Zealand, with the southern port of Van Dieman's Land, discovered by Tasman, a Dutch navigator.
1654. Bourbon, isle of, occupied by the French.
1673. Louisiana, discovered by the French. This country received its name from Le Salle, a Frenchman, who explored the Mississippi, in 1682.
1686. Easter Islands, discovered by Roggewein, a Dutch navigator.
1690. Kamschatka, the principal settlement of the Russians, on the coast of Asia, discovered by a Cossack chief, Morosko. This country was taken possession of by the Russians in 1697.
1692. Japan, carefully visited by Kemfer, a German.
1699. New Britain. This island, and the straits which separate it from New Guinea, discovered by Dampier. This enterprising seaman made a voyage round the world at the period of this discovery.
1711. Kurile Isles, occupied by the Russians. The people of these islands, which are twenty-one in number, still pay tribute to Russia. They are principally volcanic.
1628. Behring's Strait, explored and designated by a Danish navigator in the service of Russia, whose name it bears. Behring thus established that the continents of Asia and America are not united, but are distant from each other about thirty-nine miles.
1728. Kamschatka, ascertained by Behring to be a peninsula.
1741. Aleutian Isles, on the coast of North America, discovered by Behring. A more accurate survey of these islands was made under the Russian Government, by Captains Billing and Sarytchef, from 1781 to 1798.
1765. Duke of York's Islands, discovered by Byron.
1765. Isles of Danger, discovered by Byron.
1767 Otaheite, discovered by Wallis.
1768. Cook's Strait, discovered by Captain Cook on his voyage round the world, which occupied from 1768 to 1771.

A. C.

1770. New South Wales, discovered by Captain Cook.

1772. Island of Desolation, the first land south of India, discovered by Kerguelen, and called by his name, Subsequently called the Island of Desolation by Captain Cook,

1774. New Caledonia, discovered by Captain Cook in his second voyage, 1772–1775.

1778. Icy Cape, discovered by Captain Cook,

1778. Sandwich Islands, discovered by Captain Cook in his third voyage, which commenced in 1776. He lost his life in 1779.

1797. Bass's Straits. Mr. Bass, surgeon of H. M. S. Reliance, penetrated as far as Western Port, in a small open boat, from Port Jackson, and was of opinion that a strait existed between New South Wales and Van Dieman's Land. In 1799, Lieut. Flinders circumnavigated Van Dieman's Land, and named the Strait after Mr. Bass.

1804, 5, 6, Missouri, explored to its sources by Captains Lewis and Clarke, and the origin and source of the Columbia ascertained.

1819. Barrow's Straits, discovered by Lieut. Parry, who penetrated as far as Melville Island, in lat. 74 deg. 26′ min. N. and long. 113 deg. 47 min. W.

1819. New South Shetland, discovered by Mr. Smith, of the brig William, bound to Valparaiso.

1819–1822. North America, the northern limits of, determined by Captain Franklin, from the mouth of the Coppermine River to Cape Turnagain.

1821 Asia, the northern limits of, determined by Baron Wrangle.

1825–26. North America. Franklin's second expedition, in which the coast between the mouths of the Coppermine and M'Kenzie's rivers, and the coast from the mouth of the latter to 149½ W. long., were discovered.

1827. North America. In August of this year, Captain Beechey, in H. M. S. Blossom, discovered the coast from Icy Cape to Point Barrow, leaving about 140 miles of coast unexplored between this Point and Point Beechey. Point Barrow is 156½ W. long.

1829–33. North America. North-west passage. Discoveries of Captain Ross, October 18th, 1833.

1830. The Niger (termination of) discovered by Richard and John Lander, November 18th.

1838. Arctic discoveries by Dease and Simpson.

1849. Livingstone and friends trace River Zouga, Africa.

1855. Livingstone discovers Victoria Falls, Africa.

1856–1859, Du Chaillu explores Equatorial Africa.

1857. Captain Burton crosses Equatorial Africa.

1858. Captain Speke discovers Victoria Nyanza.

1875. Cameron crosses the continent of Africa.

1876. British Arctic expedition within 1,000 miles of North Pole.

1877. Stanly surveys, take Tanganyika and crosses Africa from east to west, and identified the Lualaba with the Congo river.

1878–79. Nordenskjold accomplishes the North-east passage from the Atlantic to the Pacific.

1884. The Jeannette sailed for the Arctic regions, July 8, 1879. Crushed by ice June 23, 1881. The remains of Lieut. Commander De Long and party arrived in New York February 18, 1884.

# A BRIEF LIST
## OF
# MYTHOLOGICAL AND CLASSICAL NAMES

### IN THE FABULOUS HISTORY OF THE GREEKS AND ROMANS.

---

**Achates** (a-kā′tēz). The faithful friend of Æneas, the hero of Virgil's *Æneid*.
**Acheron** (ak′e-ron). The son of Sol and Terra, changed by Jupiter into a river of hell, or the infernal regions;—used also for hell itself.
**Achilles** (a-kil′lēz). A Greek, who signalized himself in the war against Troy; and having been dipped by his mother in the River Styx, was invulnerable in every part except his right heel, but was at length killed by Paris with an arrow.
**Actæon** (ak-tē′on). The son of Aristeus, and a famous hunter, who, having surprised Diana as she was bathing, was turned by her into a stag, and killed by his own dogs.
**Adonis** (a-dō′nis). A beautiful youth beloved by Venus. He was killed by a wild boar. When wounded, Venus sprinkled nectar into his blood, from which flowers sprang up.
**Ægeus** (e-jē′us). A king of Athens, who threw himself into the sea, which after him was called the Ægean Sea.
**Ægis** (ē′jis). A shield given by Jupiter to Minerva.
**Æneas** (e-nē′as). A Trojan prince, son of Anchises and the goddess Venus, the hero of Virgil's poem, the *Æneid*.
**Æolus** (ē′o-lus). The god of the winds and storms.
**Æsculapius** (es-ku-lā′pe-us). The god of medicine, and the son of Apollo, killed by Jupiter with a thunderbolt on account of his skill, and particularly for having restored Hippolytus to life.
**Agamemnon** (ag-a-mem′non). King of Mycenæ and Argos, brother to Menelaus, and commander-in-chief of the Grecian army at the siege of Troy.
**Aganippe** (ag-a-nip′pe). A fountain at the foot of Mount Helicon, consecrated to Apollo and the Muses.
**Ajax** (ā′jaks). The son of Telamon, and, next to Achilles, the bravest of all the Greeks in the Trojan war.
**Albion** (al′be-on). The son of Neptune, who went into Britain, where he established a kingdom.
**Alceste**, or **Alcestis** (al-ses′te, or -tis). The daughter of Pelias and wife of Admetus, brought back from hell by Hercules.
**Alcides** (al-si′dēz). A patronymic or title of Hercules.
**Alecto** (a-lek′to). One of the three Furies.
**Ammon** (am′mon). A title of Jupiter.
**Amphion** (am-fī′on). The son of Jupiter and Antiope, who built the city of Thebes by the music of his harp. He and his brother Zethus are said to have invented music.
**Amphitrite** (am-fe-trī′te). The daughter of Oceanus and Tethys, goddess of the sea, and wife to Neptune.
**Andromache** (an-drom′a-ke). The daughter of Eetion, king of Thebes, and wife of Hector.
**Andromeda** (an-drom′e-da). The daughter of Cepheus and Cassiope, who, contesting with Juno and the Nereids for beauty, was exposed to a sea-monster, but was rescued and married by Perseus.
**Antæus** (an-tē′us). The son of Neptune and Terra, a famous giant, killed by Hercules.

**Antigone** (an-tig'o-ne). The daughter of Œdipus and Jocasta, famous for her filial piety.
**Apollo** (a-pol'lo). The son of Jupiter and Latona, and the god of music, poetry, eloquence, medicine, and the fine arts.
**Arachne** (a-rak'ne). A Lydian virgin, turned into a spider for contending with Minerva at spinning.
**Arethusa** (ar-e-thū'sa). One of Diana's nymphs, the daughter of Nereus and Doris, who was changed into a fountain.
**Argus** (ar'gus). The son of Arestor, said to have a hundred eyes; but being killed by Mercury when appointed by Juno to guard Io, she put his eyes on the tail of a peacock.
**Ariadne** (a-re-ad'ne). The daughter of Minos, who, from love to Theseus, gave him a clew of thread which guided him out of the Cretan labyrinth, and she became his wife; but being afterwards deserted by him, she was married to Bacchus, and made his priestess.
**Arion** (a-rī'on). A lyric poet of Methymna, who, in his voyage to Italy, saved his life from the cruelty of the mariners by means of dolphins, which the sweetness of his music brought together.
**Astræa** (as-tre'a). The goddess of justice; changed into the constellation Virgo.
**Atalanta** (at-a-lan'ta). A princess of Scyros, who consented to marry that one of her suitors who should outrun her. Hippomenes was the successful competitor.
**Atlas** (at'las). One of the Titans, and king of Mauritania, who is said to have supported the world on his shoulders, and was turned into a mountain by Perseus.
**Aurora** (au-rō'ra). The goddess of the morning.

**Bacchantes** (bak-kan'tēz). Priestesses of Bacchus.
**Bacchus** (bak'us). The son of Jupiter and Semele, and the god of wine and of drunkards.
**Bellerophon** (bel-ler'o-fon). The son of Glaucus, king of Egypt, very beautiful. With the aid of the horse Pegasus, he destroyed the Chimæra.
**Bellona** (bel-lō'na). The goddess of war, and sister of Mars.
**Belus** (bē'lus). The son of Neptune and Libya, and one of the first kings of Babylon or Assyria, to whose statue divine honors were paid, and to whom a magnificent temple was built.
**Boreas** (bō're-as). The son of Astræus and Aurora; the name of the north wind.
**Briareus** (bri-ā're-us). A giant that warred against heaven, and was feigned to have had fifty heads and one hundred hands.
**Busiris** (bu-sī'ris). The son of Neptune and Libya, a tyrant of Egypt, and a monstrous giant, who fed his horses with human flesh, and was killed by Hercules.
**Byblis** (bib'lis). The daughter of Miletus, who wept herself into a fountain through love of her brother Caunus.

**Cacus** (kā'kus). The son of Vulcan, a most notorious robber, slain by Hercules for stealing his oxen.
**Cadmus** (kad'mus). The son of Agenor, king of Phœnicia, the founder of the city of Thebes, and the reputed inventor of sixteen letters of the Greek alphabet.
**Calliope** (kal-lī'o-pe). One of the Muses, who presided over eloquence and epic poetry.
**Calypso** (ka-lip'so). One of the Oceanides, and one of the daughters of Atlas, who reigned in the island Ogygia, and entertained Ulysses.
**Camilla** (ka-mil'la). A famous queen of the Volsci, who opposed Æneas on his landing in Italy.
**Capaneus** (kap'a-nēus). A famous Grecian, killed by a stone at the siege of Thebes.
**Cassandra** (kas-san'dra). The daughter of Priam and Hecuba, endowed with the gift of prophecy by Apollo.

**Castalides** (kas-tal'i-dēs). The Muses, so called from the fountain Castalius, at the foot of Parnassus.

**Castor** (kas'tor). A son of Jupiter and Leda. He and his twin brother Pollux shared immortality alternately, and were formed into the constellation Gemini.

**Cecrops** (sē'krops). A very rich Egyptian, the founder and first king of Athens, who instituted marriage, altars, and sacrifices.

**Centaurs** (sen'taurs). A people of Thessaly, half men and half horses, vanquished by Theseus.

**Cerberus** (ser'be-rus). The three-headed dog of Pluto, which guarded the gates of hell. Hercules overcame and brought him away.

**Ceres** (sē'rēz). The daughter of Saturn and Cybele, and goddess of corn, harvest, and flowers.

**Charon** (kā'ron). The son of Erebus and Nox, and ferryman of hell, who conducted the souls of the dead, in a boat, over the Rivers Styx and Acheron.

**Charybdis** (ka-rib'dis). A ravenous woman, turned by Jupiter into a very dangerous gulf or whirlpool on the coast of Sicily.

**Chiron** (kī'ron). The son of Saturn and Phillyra, a Centaur, who was preceptor to Achilles, taught Æsculapius physic, and Hercules astronomy; and who was made the constellation Sagittarius.

**Chryseis** (kri-sē'is). The daughter of Chryses, priest of Apollo, famed for beauty and for her skill in embroidery. She fell to Agamemnon's lot in the cause of the Trojan war, but was afterwards restored, in order to stop a plague amongst the Grecians, which Apollo had sent at the request of her father.

**Circe** (sir'se). The daughter of Sol and Perse, a noted enchantress.

**Clio** (klī'o). One of the Muses. She presided over history.

**Clytemnestra** (klit-em-nes'tra). The faithless wife of Agamemnon, killed by her son Orestes for her crimes.

**Comus** (kō'mus). The god of revelry, feasting, and jollity.

**Crocus** (krō'kus). A young man who was enamored of the nymph Smilax, and changed into the flower of the name of crocus.

**Crœsus** (krē'sus). The king of Lydia, and the richest man of his time.

**Cupid** (kū-pid). The son of Mars and Venus, a celebrated deity; the god of love, and love itself.

**Cybele** (sib'e-le). The daughter of Cœlus and Terra, the wife of Saturn, and the mother of the gods.

**Cyclops** (sī'klops). Vulcan's workmen, giants who had only one eye, in the middle of their forehead, and were slain by Apollo in a pique against Jupiter.

**Dædalus** (dē'da-lus). A most ingenious artist and artificer of Athens, who formed the Cretan labyrinth, and invented the auger, axe, glue, plumb-line, saw, and masts and sails for ships.

**Danaides** (da-nā'i-dēz). The fifty daughters of Danaus, king of Argos, all of whom, except Hypermnestra, killed their husbands on the first night after marriage, and were therefore doomed to draw water out of a deep well, and eternally to pour it into a cask full of holes.

**Daphne** (daf'ne). The daughter of the River Peneus, changed into a laurel-tree.

**Daphnis** (daf'nis). A shepherd of Sicily, and son of Mercury. He was educated by the nymphs, and inspired by the Muses with the love of poetry.

**Dardanus** (dar'da-nus). The son of Jupiter and Electra, and founder of Troy.

**Deidamia** (de-id-a-mī'a). The daughter of Lycomedes, king of Scyros, wife of Achilles, and mother of Pyrrhus.

**Deiphobus** (de-if'o-bus). The son of Priam and Hecuba, who married Helena after the death of Paris, but was betrayed by her to the Greeks.

**Dejanira** (dej-a-nī'ra). The daughter of Œneus, and wife of Hercules, who killed herself in despair, because her husband burnt himself to avoid the torment occasioned by the poisoned shirt that she had given him to regain his love, according to the direction of Nessus, the centaur, from whom she received it.

**Delos** (dē'los). An island in the Ægean Sea, where Apollo was born, and where he had a famous oracle.

**Delphi** (del'fī). A city of Phocis, famous for an oracle of Apollo.

**Deucalion** (deu-kā'li-on). The son of Prometheus, and king of Thessaly, who, with his wife Pyrrha, was preserved from the general deluge, and repeopled the world by throwing stones behind them, as directed by the oracle.

**Diana** (di-ā'na). The daughter of Jupiter and Latona, and the goddess of hunting, chastity, and marriage.

**Dictynna** (dic-tin'na). A nymph of Crete, and one of the attendants of Diana.

**Dido** (dī'do). The queen of Carthage, daughter of Belus, and wife of Sichæus. She built Carthage, and, according to Virgil, entertained Æneas on his voyage to Italy, and stabbed herself through despair, because Æneas left her.

**Diomedes** (di-o-mē'dez). The son of Tydeus, and king of Ætolia, who gained great reputation at Troy, and who, with Ulysses, &c., carried off the Palladium.

**Dirce** (dir'se). The wife of Lycus, king of Thebes, dragged to death by a mad bull.

**Draco** (drā'ko). An Athenian lawgiver, so severe as to punish every crime with death.

**Dryades** (drī'a-dēz). Nymphs who presided over the woods.

**Echo** (ek'o). The daughter of Aer, or Air, and Tellus, who pined away through love for Narcissus.

**Electra** (e-lek'tra). The daughter of Agamemnon and Clytemnestra, who instigated her brother Orestes to revenge their father's death upon their mother and Ægisthus.

**Elysium** (e-lizh'e-um). The happy residence of the virtuous after death.

**Enceladus** (en-sel'a-dus). The son of Titan and Terra, and the strongest of the giants, who conspired against Jupiter, and attempted to scale heaven.

**Endymion** (en-dim'i-on). A shepherd and an astronomer of Caria, condemned to a sleep of thirty years.

**Epeus** (e-pē'us). An artist, who made the Trojan horse, and invented the sword and buckler.

**Erato** (er'a-to). One of the Muses:—she presided over lyric and amorous poetry.

**Erebus** (er'e-bus). The son of Chaos and Nox, an infernal deity:—a river of hell, and often used by the poets for hell itself.

**Erinnys** (e-rin'nys). The Greek name for the Eumenides, or Furies.

**Eumenides** (ū-men'i dēz). A name of the Furies.

**Euphorbus** (ū-for'bus). The son of Panthous, slain by Menelaus in the Trojan war.

**Euphrosyne** (ū-fros'e-ne). One of the three Graces.

**Euryale** (ū-rī'a-le). A queen of the Amazons:—also one of the three Gorgons.

**Euryalus** (ū-rī'a-lus). A Peloponnesian chief in the Trojan war:—also a Trojan and a friend of Nisus, for whose loss Æneas was inconsolable.

**Eurydice** (ū-rid'i-se). The wife of Orpheus, killed by a serpent on her marriage day.

**Eurylochus** (ū-ril'o-kus). One of the companions of Ulysses, and the only one who was not changed by Circe into a hog.

**Eurystheus** (ū-ris'the-us). The son of Sthenelus, and king of Mycenæ, who, at Juno's instigation, set his brother Hercules twelve difficult labors.

**Euterpe** (ū-ter'pe). One of the Muses,—the one who presided over music.

**Fates** (fāt̆es). Powerful goddesses, who presided over the birth and the life of mankind, were the three daughters of Nox and Erebus, named Clotho, Lachesis, and Atropos. Clotho was supposed to hold the distaff, Lachesis to draw the thread of human life, and Atropos to cut it off.

**Fauna** (faw′na). A Roman deity, the wife of Faunus.

**Fauni** (faw′ni). Rural deities, described as having the legs, feet, and ears of goats, and the rest of the body human.

**Faunus** (faw′nus). A king of Italy about thirteen hundred years B. C.; fond of agriculture, and revered as a deity.

**Flora** (flō′ra). The goddess of flowers and gardens.

**Fortuna** (for-tū′na). A powerful deity, the goddess of fortune, from whose hand were derived riches and poverty, happiness and misery;—said to be blind.

**Furies** (fū′ries). The three daughters of Nox and Acheron, Alecto, Tisiphone, and Megæra.

**Galatæa** (gal-a-tē′a). A sea-nymph, the daughter of Nereus and Doris, passionately loved by Polyphemus.

**Ganymede** (gan′e-mēde). The son of Tros, king of Troy, whom Jupiter, in the form of an eagle, snatched up and made his cup-bearer, instead of Hebe.

**Geryon** (jē′re-on). A monster, represented as having three bodies and three heads, and as having fed his oxen with human flesh, and was therefore killed by Hercules.

**Gordius** (gor′de-us). A husbandman, but afterwards king of Phrygia, remarkable for tying a knot of cords, on which the empire of Asia depended, in so very intricate a manner, that Alexander, unable to unravel it, cut it asunder.

**Gorgons** (gor′gons). The three daughters of Phorcus and Ceto, named Stheno, Euryale, and Medusa. Their bodies were covered with impenetrable scales, their hair entwined with serpents; they had only one eye betwixt them, and they could change into stones those whom they looked on.

**Graces** (grā′sez). Three goddesses, represented as beautiful, modest virgins, and constant attendants on Venus.

**Harpies** (har′pēz. The three daughters of Neptune and Terra, named Aello, Celæno, and Ocypete, winged monsters with the faces of virgins, the bodies of vultures, and hands armed with claws.

**Hebe** (hē′be). The daughter of Juno, goddess of youth, and Jupiter's cup-bearer, banished from heaven on account of an unlucky fall.

**Hector** (hek′tor). The son of Priam and Hecuba, the most valiant of the Trojans, and slain by Achilles.

**Hecuba** (hek′u-ba). The daughter of Dimas, king of Thrace, and wife of Priam, who tore her eyes out for the loss of her children.

**Helen** (hel′en). The daughter of Tyndarus and Leda, and wife of Menelaus, the most beautiful woman of her age, who, running away with Paris, occasioned the Trojan war.

**Helenus** (hel′e-nus). The son of Priam and Hecuba, spared by the Greeks for his skill in divination.

**Helle** (hel′le). The daughter of Athamas, who, flying from her stepmother Ino, was drowned in the Pontic Sea, and gave it the name of Hellespont.

**Hercules** (her′ku-lēz). The son of Jupiter and Alcmena, the most famous hero of antiquity, remarkable for his great strength.

**Hermione** (her-mī′o-ne). The daughter of Mars and Venus, and wife of Cadmus, who was changed into a serpent.

**Hero** (hē′ro). A beautiful woman of Sestos, in Thrace, and priestess of Venus, whom Leander of Abydos loved so tenderly that he swam over the Hellespont every night to see her; but at length being unfortunately drowned, she threw herself, in despair, into the sea.

**Hesione** (he-sī′o-ne). The daughter of Laomedon, king of Troy, delivered from a sea-monster by Hercules.

**Hesperides** (hes-per'i-dēz). Three nymphs, daughters of Hesperus, who guarded the golden apples which Juno gave to Jupiter.

**Hesperus** (hes'per-us). The son of Japetus, and brother to Atlas; changed into the evening star.

**Hippolytus** (hip-pol'e-tus). The son of Theseus and Antiope, or Hippolyte, who was restored to life by Æsculapius, at the request of Diana.

**Hippomenes** (hip-pom'e-nēz). A Grecian prince, who, beating Atalanta in the race by throwing golden apples before her, married her. They were changed by Cybele into lions.

**Hyacinthus** (hī-a-sin'thus). A beautiful boy, beloved by Apollo and Zephyrus. The latter killed him; but Apollo changed the blood that was spilt into a flower called the Hyacinth.

**Hydra** (hī'dra). A celebrated monster, or serpent, with nine, or, according to some, a hundred heads, which infested the Lake Lerna. It was killed by Hercules.

**Hymen** (hī'men). The son of Bacchus and Venus, and god of marriage.

**Icarus** (ik'a-rus). The son of Dædalus, who, flying with his father out of Crete into Sicily, and soaring too high, melted the wax of his wings, and fell into the sea,—thence called the Icarian Sea.

**Io** (ī'o). The daughter of Inachus and Ismene, turned by Jupiter into a cow, and worshipped after her death, by the Egyptians, under the name of Isis.

**Iphigenia** (if-i-je-nī'a). The daughter of Agamemnon and Clytemnestra, and a priestess of Diana.

**Iris** (ī'ris). The daughter of Thaumas and Electra, one of the Oceanides, and messenger of Juno, who turned her into a rainbow.

**Ixion** (iks-ī'on). A king of Thessaly, the father of the Centaurs, who killed his own sister, and was punished by being fastened in hell to a wheel perpetually turning round.

**Janus** (jā'nus). The son of Apollo and Creusa, and first king of Italy, who, receiving the banished Saturn, was rewarded by him with the knowledge of husbandry, and of things past and future.

**Jason** (jā'son). The leader of the Argonauts, who obtained the golden fleece at Colchis.

**Juno** (jū'no). The daughter of Saturn and Ops, sister and wife of Jupiter, the great queen of heaven, and of all the gods, and goddess of marriages and births.

**Jupiter** (jū'pe-ter). The son of Saturn and Ops, the supreme deity of the heathen world, the most powerful of all the gods, and governor of all things.

**Laocoon** (la-ok'o-on). The son of Priam and Hecuba, and high priest of Apollo, who opposed the reception of the wooden horse into Troy.

**Laomedon** (la-om'e-don). A king of Troy, killed by Hercules, for denying him his daughter Hesione after he had delivered her from the sea-monster, to which she had been exposed, on account of her father's refusal to pay Neptune and Apollo for building the city walls.

**Lares** (lā'rēz). Inferior gods at Rome, who presided over houses and families.

**Latona** (la-tō'na). The daughter of Cœus the Titan and Phœbe, and mother of Apollo and Diana.

**Leda** (lē'da). The mother of Castor and Pollux, of Helen and Clytemnenira.

**Lucifer** (lū'se-fer). The name of the planet Venus, or morning star; said to be the son of Jupiter and Aurora.

**Lucina** (lu-sī'na). A daughter of Jupiter and Juno, and a goddess who presided over childbirth.

**Luna** (lū'na). The moon, the daughter of Hyperion and Terra.

**Medea** (me-dē'a). The daughter of Æetes, and a wonderful sorceress, or magician.

**Medusa** (me-dū′sa). One of the three Gorgons, whose hair Minerva changed into snakes. She was killed by Perseus.
**Melpomene** (mel-pom′e-ne). One of the Muses,—the one who presided over tragedy.
**Memnon** (mem′non). King of Æthiopia, the son of Tithonus and Aurora, and king of Abydon, killed by Achilles for assisting Priam, and changed into a bird at the request of his mother.
**Menelaus** (men-e-lā′us). The son of Atreus, king of Sparta, brother of Agamemnon, and husband of Helena.
**Mentor** (men′tor). The faithful friend of Ulysses, the governor of Telemachus, and the wisest man of his time.
**Mercury** (mer′ku-re). The son of Jupiter and Maia, messenger of the gods, inventor of letters, and god of eloquence, commerce, and travelers.
**Minerva** (mi-ner′va). The goddess of wisdom, the arts, and war; produced from Jupiter's brain.
**Minotaur** (min′o-taur). A celebrated monster, half man and half bull, killed by Theseus.
**Mnemosyne** (ne-mos′e-ne). The goddess of memory, and the mother of the nine muses.
**Momus** (mō′mus). The son of Nox, and god of folly and pleasantry.
**Morpheus** (mor′fe-us). The minister of Nox and Somnus, and god of dreams.

**Naiads** (nā′idz). Nymphs of streams and fountains.
**Nemesis** (nem′e-sis). One of the infernal deities, and goddess of vengeance.
**Neptune** (nep′tūne). The son of Saturn and Ops, god of the sea, and, next to Jupiter, the most powerful deity; represented with a trident in his right hand.
**Nestor** (nes′tor). The son of Neleus and Chloris, and king of Pylos and Messenia. He fought against the Centaurs, was distinguished in the Trojan war, and lived to a great age.
**Niobe** (nī′o-be). The daughter of Tantalus, and wife of Amphion, who, preferring herself to Latona, had her fourteen children killed, and wept herself into a stone.
**Nox** (noks). One of the most ancient of the deities, and goddess of night.

**Oceanides** (ō-se-an′i-dēz). Sea-nymphs, daughters of Oceanus; three thousand in number.
**Oceanus** (ō-sē′a-nus). A powerful deity of the sea, son of Cœlus and Terra.
**Orpheus** (or′fe-us). A celebrated Argonaut, whose skill in music is said to have been so great that he could make rocks, trees, &c., follow him.
**Osiris** (o-sī′ris). The son of Jupiter, married to Io, and worshipped by the Egyptians under the form of an ox.

**Pan** (pan). The son of Mercury, and the god of shepherds, huntsmen, and the inhabitants of the country.
**Pandora** (pan-dō′ra). A celebrated woman, and, according to Hesiod, the first mortal female that ever lived. Jupiter gave her a box which contained all the evils and miseries of life; but with *hope* at the bottom.
**Paris** (par′is). The son of Priam and Hecuba, a most beautiful youth, who ran away with Helen, and thus occasioned the Trojan war.
**Pegasus** (peg′a-sus). A winged horse belonging to Apollo and the Muses, which sprung from the blood of Medusa, when Perseus cut off her head.
**Penates** (pe-nā′tēz). Small statues, or household gods.
**Penelope** (pe-nel′o-pe). A celebrated princess of Greece, wife of Ulysses, remarkable for her chastity and constancy in the long absence of her husband.
**Philomela** (fil-o-mē′la). The daughter of Pandion, king of Athens, who was changed into a nightingale.
**Pluto** (plū′to). The son of Saturn and Ops, brother of Jupiter and Neptune, and the god of the infernal regions.
**Plutus** (plū′tus). The son of Jasius and Ceres, and the god of riches.
**Pomona** (po-mō′na). The goddess of gardens and fruit-trees.

**Priam** (prī'am). The last king of Troy, the son of Laomedon, under whose reign Troy was taken by the Greeks.
**Prometheus** (pro-mē'the-us). The son of Japetus. He is said to have stolen fire from heaven to animate two bodies which he had formed of clay; and he was therefore chained by Jupiter to Mount Caucasus, with a vulture perpetually gnawing his liver.
**Proteus** (prō'te-us). The son of Oceanus and Tethys, a sea-god and prophet, who possessed the power of changing himself into different shapes.
**Psyche** (sī'ke). A nymph beloved by Cupid, and made immortal by Jupiter.
**Pygmies** (pig'mies). A nation of dwarfs only a span high, carried away by Hercules.

**Remus** (rē'mus). The elder brother of Romulus, killed by him for ridiculing the city walls, which he had just erected.
**Rhadamanthus** (rad-a-man'thus). Son of Jupiter and Europa, and king of Lycia, made one of the three infernal judges on account of his justice and goodness.
**Romulus** (rom'u-lus). The son of Mars and Ilia; he was thrown into the Tiber by his uncle, but was saved, with his twin brother Remus, by a shepherd; and he became the founder and first king of Rome.

**Semele** (sem'e-le). The daughter of Cadmus and Thebe, and mother of Bacchus.
**Semiramis** (se-mir'a-mis). The wife of Ninus, and celebrated queen of Assyria, who built the walls of Babylon, and was slain by her own son Ninyas, and turned into a pigeon.
**Silenus** (si-lē'nus). The foster-father, master, and companion of Bacchus, who lived in Arcadia, rode on an ass, and was every day inebriated.
**Sirens** (sī'rens). Sea-nymphs, or sea-monsters, the daughters of Oceanus and Amphitrite.
**Sisyphus** (sis'e-fus). The son of Æolus, a most crafty prince, killed by Theseus, and condemned by Pluto to roll up hill a large stone, which constantly fell back again.
**Somnus** (som'nus). The son of Erebus and Nox, and the god of sleep.
**Sphinx** (sfinks). A monster, who destroyed herself because Œdipus solved the enigma or riddle she proposed.
**Stentor** (sten'tor). A Grecian, whose voice is reported to have been as strong and as loud as the voices of fifty men together.
**Sylvanus** (sil-vā'nus). A god of the woods and forests.

**Tantalus** (tan'ta-lus). The son of Jupiter, and king of Lydia, who served up the limbs of his son Pelops to try the divinity of the gods.
**Tartarus** (tar'ta-rus). The part of the infernal regions in which the most impious and criminal were punished.
**Terpsichore** (terp-sik'o-re). One of the Muses:—she presided over dancing.
**Themis** (thē'mis). The daughter of Cœlus and Terra, and goddess of justice.
**Tisiphone** (ti-sif'o-ne). One of the three Furies.
**Titan** (tī'tan). The son of Cœlus and Terra, brother of Saturn, and one of the giants who warred against heaven.
**Tithonus** (ti-thō'nus). The son of Laomedon, loved by Aurora, and turned by her, in his old age, into a grasshopper.
**Triton** (trī'ton). The son of Neptune and Amphitrite, a powerful sea-god, and Neptune's trumpeter.

**Venus** (vē'nus). One of the most celebrated deities of the ancients, the wife of Vulcan, the goddess of beauty, the mother of love, and the mistress of the graces and of pleasures.
**Vertumnus** (ver-tum'nus). A deity of the Romans, who presided over spring and orchards, and who was the lover of Pomona.
**Vesta** (ves'ta). The sister of Ceres and Juno, the goddess of fire, and patroness of vestal virgins.
**Vulcan** (vul'kan). The god who presided over fire and workers in metal.

# INTEREST TABLES.

## Four per cent.

| Time. | $1 | $2 | $3 | $4 | $5 | $6 | $7 | $8 | $9 | $10 | $25 | $50 | 100 | 1,000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 days. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 44 |
| 8 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 9 | 87 |
| 12 " | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 6 | 13 | $1.31 |
| 16 " | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 5 | 9 | 17 | 1.74 |
| 20 " | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 6 | 11 | 22 | 2.19 |
| 24 " | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 7 | 13 | 26 | 2.62 |
| 28 " | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 8 | 16 | 33 | 3.33 |
| 1 mo. | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 8 | 17 | 33 | 3.33 |
| 2 mos. | 0 | 1 | 2 | 2 | 3 | 4 | 4 | 5 | 6 | 7 | 17 | 33 | 67 | 6.67 |
| 3 " | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 25 | 50 | 1.00 | 10.00 |
| 4 " | 1 | 2 | 4 | 5 | 6 | 8 | 10 | 10 | 12 | 13 | 33 | 66 | 1.33 | 13.33 |
| 5 " | 2 | 4 | 5 | 7 | 8 | 10 | 13 | 13 | 15 | 16 | 42 | 83 | 1.67 | 16.67 |
| 6 " | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 50 | 1.00 | 2.00 | 20.00 |
| 1 year. | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 1.00 | 2.00 | 4.00 | 40.00 |

## Five per cent.

| Time. | $1 | $2 | $3 | $4 | $5 | $6 | $7 | $8 | $9 | $10 | $25 | $50 | 100 | 1,000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 day. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 13 |
| 2 days. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 27 |
| 3 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 41 |
| 4 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 5 | 54 |
| 5 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 68 |
| 6 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 9 | 82 |
| 7 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 10 | 95 |
| 8 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 5 | 11 | $1.10 |
| 9 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 6 | 12 | 1.23 |
| 10 " | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 6 | 13 | 1.37 |
| 11 " | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 7 | 15 | 1.51 |
| 12 " | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 4 | 8 | 17 | 1.64 |
| 13 " | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 4 | 8 | 17 | 1.88 |
| 14 " | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 4 | 9 | 18 | 1.92 |
| 15 " | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 5 | 10 | 20 | 2.05 |
| 16 " | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 5 | 10 | 21 | 2.19 |
| 17 " | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 5 | 11 | 22 | 2.32 |
| 18 " | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 12 | 23 | 2.46 |
| 19 " | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 12 | 24 | 2.50 |
| 20 " | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 6 | 13 | 25 | 2.64 |
| 21 " | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 7 | 13 | 26 | 2.76 |
| 22 " | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 7 | 14 | 27 | 2.86 |
| 23 " | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 7 | 14 | 28 | 2.98 |
| 24 " | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 8 | 15 | 29 | 3.11 |
| 25 " | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 8 | 15 | 31 | 3.24 |
| 26 " | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 8 | 16 | 33 | 3.37 |
| 27 " | 0 | 0 | 0 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 9 | 17 | 35 | 3.50 |
| 28 " | 0 | 0 | 0 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 9 | 18 | 37 | 3.63 |
| 29 " | 0 | 0 | 0 | 1 | 2 | 2 | 3 | 3 | 3 | 4 | 9 | 19 | 39 | 3.77 |
| 1 mo. | 0 | 0 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 10 | 21 | 42 | 4.16 |
| 2 mos. | 1 | 1 | 2 | 3 | 4 | 5 | 6 | 6 | 7 | 8 | 21 | 42 | 83 | 8.38 |
| 3 " | 1 | 2 | 4 | 5 | 6 | 7 | 9 | 10 | 11 | 12 | 31 | 63 | 1.25 | 12.50 |
| 4 " | 2 | 3 | 5 | 7 | 8 | 10 | 12 | 13 | 15 | 16 | 42 | 83 | 1.66 | 16.66 |
| 5 " | 2 | 4 | 6 | 8 | 10 | 12 | 15 | 17 | 19 | 21 | 52 | 1.04 | 2.08 | 20.83 |
| 6 " | 3 | 5 | 7 | 9 | 12 | 15 | 18 | 20 | 23 | 25 | 63 | 1.25 | 2.50 | 25.00 |
| 1 year. | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 1.25 | 2.50 | 5.00 | 50.00 |

## SIX PER CENT.

| Time. | $1 | $2 | $3 | $4 | $5 | $6 | $7 | $8 | $9 | $10 | $25 | $50 | 100 | 1,000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 day. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 16 |
| 2 days. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 33 |
| 3 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 5 | 50 |
| 4 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 67 |
| 5 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 8 | 83 |
| 6 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 5 | 10 | $1.00 |
| 7 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 6 | 12 | 1.20 |
| 8 " | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 6 | 13 | 1.33 |
| 9 " | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 7 | 15 | 1.50 |
| 10 " | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 4 | 8 | 16 | 1.67 |
| 11 " | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 4 | 8 | 17 | 1.83 |
| 12 " | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 4 | 9 | 18 | 2.00 |
| 13 " | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 5 | 10 | 22 | 2.17 |
| 14 " | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 5 | 11 | 23 | 2.33 |
| 15 " | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 12 | 25 | 2.50 |
| 16 " | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 13 | 26 | 2.67 |
| 17 " | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 13 | 28 | 2.83 |
| 18 " | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 7 | 14 | 30 | 3.00 |
| 19 " | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 7 | 15 | 31 | 3.16 |
| 20 " | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 8 | 16 | 33 | 3.33 |
| 21 " | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 8 | 17 | 35 | 3.50 |
| 22 " | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 9 | 18 | 36 | 3.66 |
| 23 " | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 9 | 19 | 38 | 3.73 |
| 24 " | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 10 | 20 | 40 | 4.00 |
| 25 " | 0 | 0 | 0 | 1 | 2 | 2 | 3 | 3 | 3 | 4 | 10 | 21 | 41 | 4.17 |
| 26 " | 0 | 0 | 0 | 1 | 2 | 2 | 3 | 3 | 3 | 4 | 11 | 22 | 43 | 4.33 |
| 27 " | 0 | 0 | 0 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 11 | 23 | 45 | 4.50 |
| 28 " | 0 | 0 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 12 | 24 | 48 | 4.67 |
| 29 " | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 12 | 25 | 50 | 4.83 |
| 1 mo. | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 12 | 25 | 50 | 5.00 |
| 2 mos. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 25 | 50 | 1.00 | 10.00 |
| 3 " | 1 | 3 | 4 | 6 | 7 | 9 | 10 | 12 | 13 | 15 | 37 | 75 | 1.50 | 15.00 |
| 4 " | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 50 | 1.00 | 2.00 | 20.00 |
| 5 " | 2 | 5 | 7 | 10 | 12 | 15 | 17 | 20 | 22 | 25 | 62 | 1.25 | 2.50 | 25.00 |
| 6 " | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 75 | 1.50 | 3.00 | 30.00 |
| 1 year. | 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 1.50 | 3.00 | 6.00 | 60.00 |

## EIGHT PER CENT.

| Time. | $1 | $2 | $3 | $4 | $5 | $6 | $7 | $8 | $9 | $10 | $25 | $50 | 100 | 1,000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 days. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 9 | 88 |
| 8 " | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 9 | 17 | $1.76 |
| 12 " | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 6 | 13 | 26 | 2.63 |
| 16 " | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 9 | 17 | 35 | 3.52 |
| 20 " | 0 | 0 | 1 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 11 | 22 | 44 | 4.40 |
| 24 " | 0 | 0 | 1 | 2 | 2 | 3 | 4 | 4 | 5 | 5 | 13 | 26 | 53 | 5.28 |
| 28 " | 0 | 1 | 2 | 2 | 3 | 4 | 4 | 5 | 5 | 6 | 16 | 31 | 61 | 6.16 |
| 1 mo. | 0 | 1 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | 17 | 33 | 67 | 6.67 |
| 2 mos. | 1 | 2 | 4 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 33 | 67 | 1.33 | 13.33 |
| 3 " | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 50 | 1.00 | 2.00 | 20.00 |
| 4 " | 3 | 5 | 8 | 11 | 13 | 16 | 18 | 21 | 24 | 26 | 67 | 1.33 | 2.67 | 26.67 |
| 5 " | 3 | 7 | 10 | 13 | 17 | 20 | 23 | 27 | 30 | 33 | 83 | 1.67 | 3.33 | 33.33 |
| 6 " | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 1.00 | 2.00 | 4.00 | 40.00 |
| 1 year. | 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 2.00 | 4.00 | 8.00 | 80.00 |

## SEVEN PER CENT.

| Time. | $1 | $2 | $3 | $4 | $5 | $6 | $7 | $8 | $9 | $10 | $25 | $50 | 100 | 1,000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 day. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 19 |
| 2 days. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 38 |
| 3 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 57 |
| 4 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 8 | 77 |
| 5 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 9 | 96 |
| 6 " | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 5 | 11 | $1.16 |
| 7 " | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 6 | 13 | 1.35 |
| 8 " | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 7 | 15 | 1.55 |
| 9 " | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 4 | 8 | 17 | 1.73 |
| 10 " | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 4 | 9 | 19 | 1.92 |
| 11 " | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 5 | 10 | 21 | 2.12 |
| 12 " | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 5 | 11 | 23 | 2.31 |
| 13 " | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 12 | 25 | 2.50 |
| 14 " | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 13 | 27 | 2.69 |
| 15 " | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 7 | 14 | 29 | 2.91 |
| 16 " | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 7 | 15 | 31 | 3.10 |
| 17 " | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 8 | 16 | 33 | 3.29 |
| 18 " | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 8 | 17 | 34 | 3.46 |
| 19 " | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 9 | 18 | 36 | 3.65 |
| 20 " | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 9 | 19 | 38 | 3.84 |
| 21 " | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 10 | 20 | 40 | 4.04 |
| 22 " | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 4 | 4 | 10 | 21 | 42 | 4.23 |
| 23 " | 0 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 11 | 22 | 44 | 4.42 |
| 24 " | 0 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 11 | 23 | 46 | 4.62 |
| 25 " | 0 | 0 | 1 | 1 | 2 | 3 | 3 | 3 | 4 | 4 | 12 | 24 | 48 | 4.81 |
| 26 " | 0 | 0 | 1 | 1 | 2 | 3 | 3 | 4 | 4 | 5 | 12 | 25 | 50 | 5.00 |
| 27 " | 0 | 0 | 1 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | 13 | 26 | 52 | 5.20 |
| 28 " | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 | 5 | 5 | 13 | 27 | 53 | 5.39 |
| 29 " | 0 | 1 | 1 | 2 | 2 | 3 | 4 | 4 | 5 | 5 | 14 | 28 | 55 | 5.58 |
| 1 mo. | 0 | 1 | 2 | 2 | 3 | 3 | 4 | 4 | 5 | 6 | 14 | 29 | 58 | 5.83 |
| 2 mos. | 1 | 2 | 3 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 29 | 58 | 1.17 | 11.67 |
| 3 " | 2 | 3 | 5 | 7 | 9 | 10 | 12 | 14 | 16 | 18 | 44 | 88 | 1.75 | 17.50 |
| 4 " | 2 | 4 | 7 | 9 | 12 | 14 | 16 | 18 | 21 | 23 | 58 | 1.17 | 2.33 | 23.33 |
| 5 " | 3 | 6 | 9 | 12 | 15 | 17 | 20 | 23 | 26 | 29 | 73 | 1.46 | 2.91 | 29.17 |
| 6 " | 4 | 7 | 11 | 14 | 18 | 21 | 25 | 28 | 32 | 35 | 88 | 1.75 | 3.50 | 35.00 |
| 1 year. | 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | 70 | 1.75 | 3.50 | 7.00 | 70.00 |

## TEN PER CENT.

| Time. | $1 | $2 | $3 | $4 | $5 | $6 | $7 | $8 | $9 | $10 | $25 | $50 | 100 | 1,000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 days. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 5 | 11 | $1.10 |
| 8 " | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 5 | 11 | 22 | 2.19 |
| 12 " | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 8 | 16 | 33 | 3.28 |
| 16 " | 0 | 0 | 1 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | 11 | 22 | 44 | 4.38 |
| 20 " | 0 | 1 | 2 | 2 | 2 | 3 | 4 | 4 | 5 | 5 | 14 | 27 | 55 | 5.48 |
| 24 " | 0 | 1 | 2 | 2 | 3 | 4 | 4 | 5 | 6 | 6 | 17 | 33 | 66 | 6.57 |
| 28 " | 0 | 1 | 2 | 3 | 4 | 5 | 5 | 6 | 7 | 7 | 19 | 38 | 77 | 7.67 |
| 1 mo. | 1 | 1 | 3 | 3 | 4 | 5 | 6 | 6 | 7 | 8 | 21 | 42 | 83 | 8.33 |
| 2 mos. | 2 | 3 | 5 | 6 | 8 | 10 | 12 | 13 | 15 | 17 | 42 | 83 | 1.67 | 16.67 |
| 3 " | 2 | 5 | 7 | 10 | 13 | 15 | 17 | 20 | 23 | 25 | 62 | 1.25 | 2.50 | 25.00 |
| 4 " | 3 | 6 | 10 | 12 | 17 | 20 | 23 | 27 | 30 | 33 | 83 | 1.67 | 3.33 | 33.33 |
| 5 " | 4 | 7 | 13 | 15 | 21 | 25 | 29 | 33 | 37 | 42 | 1.04 | 2.08 | 4.17 | 41.67 |
| 6 " | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 1.25 | 2.50 | 5.00 | 50.00 |
| 1 year. | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 1.00 | 2.50 | 5.00 | 1000 | 100.00 |

## LEGAL WEIGHT OF A BUSHEL IN POUNDS, IN DIFFERENT STATES AND TERRITORIES.*

| States and Territories. | Wheat | Rye | Oats. | Barley. | Buckwheat | Shelled Corn. | Corn on Cob. | Corn Meal. | Potatoes. | Sweet Potatoes. | Onions | Turnips | B'ns | Peas. | Dried apples | Dried peaches. | Flaxseed. | Timothy seed. | Bluegrass seed. | Clover seed. | Coal, anthracite. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arkansas | 60 | 56 | 32 | 48 | 52 | .. | 70 | 50 | 60 | 50 | 57 | .. | 60 | 46 | 24 | 33 | 56 | 45 | 14 | 60 | 80 |
| Arizona | 60 | 56 | 32 | 45 | .. | 54 | .. | .. | .. | .. | .. | .. | 60 | .. | .. | .. | .. | .. | .. | .. | .. |
| California | 60 | 54 | 32 | 50 | 40 | 52 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Colorado | 60 | 56 | 32 | 48 | 52 | 56 | 70 | 50 | 60 | .. | 57 | .. | 60 | .. | .. | .. | .. | 45 | 14 | 60 | .. |
| Connecticut | 60 | 56 | 32 | 48 | 48 | 56 | .. | 50 | 60 | .. | 50 | 50 | 60 | 60 | .. | .. | .. | .. | .. | .. | .. |
| Dakota | 60 | 56 | 32 | 48 | 42 | 56 | 70 | .. | 60 | 46 | 52 | 60 | 60 | 60 | .. | .. | 56 | 42 | .. | 60 | 80 |
| Delaware | .. | .. | .. | .. | .. | 56 | .. | 48 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Dist. Columbia | 60 | 56 | 32 | .. | .. | 56 | .. | 48 | 60 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Georgia | 60 | 56 | 32 | 47 | 52 | 56 | 70 | 48 | 60 | 55 | 57 | 55 | 60 | 60 | 24 | 33 | 56 | 45 | 14 | 60 | 80 |
| Illinois | 60 | 56 | 32 | 48 | 52 | 56 | 70 | 48 | 60 | 55 | 57 | 55 | 60 | .. | 24 | 33 | 56 | 45 | 14 | 60 | 80 |
| Indiana | 60 | 56 | .. | 48 | 50 | 56 | 68 | 50 | 60 | .. | 48 | .. | 60 | .. | 25 | 33 | .. | 45 | 14 | 60 | .. |
| Iowa | 60 | 56 | 32 | 48 | 52 | 56 | 70 | .. | 60 | 46 | 57 | .. | 60 | .. | 24 | 33 | 56 | 45 | 14 | 60 | 80 |
| Kansas | 60 | 56 | 32 | 48 | 50 | 56 | 70 | 50 | 60 | 50 | 57 | 55 | 60 | .. | 24 | 33 | 54 | 45 | 14 | 60 | 80 |
| Kentucky | 60 | 56 | 32 | 47 | 55 | 55 | 70 | 50 | 60 | 55 | 57 | 60 | 60 | 60 | 24 | 39 | 56 | 45 | 14 | 60 | 76 |
| Louisiana | 60 | 32 | 32 | 32 | .. | 50 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Maine | 60 | 50 | 30 | 48 | 48 | 56 | .. | 50 | 60 | .. | 52 | 50 | 64 | 60 | .. | .. | .. | .. | .. | .. | . |
| Maryland | 60 | 56 | 32 | 47 | 48 | 56 | 70 | 48 | .. | 56 | 56 | .. | 60 | .. | .. | .. | .. | 45 | 14 | 64 | . |
| Massachusetts | 60 | 56 | 32 | 48 | 48 | 56 | .. | 50 | 60 | 56 | 52 | .. | .. | .. | .. | .. | .. | .. | .. | .. | . |
| Michigan | 60 | 56 | 32 | 48 | 48 | 56 | 70 | 50 | 60 | 56 | 54 | 58 | 60 | 60 | 22 | 28 | 56 | 45 | 14 | 60 | .. |
| Minnesota | 60 | 56 | 32 | 48 | 42 | 56 | .. | .. | 60 | .. | .. | .. | .. | .. | 28 | 28 | .. | .. | .. | 60 | .. |
| Missouri | 60 | 56 | 32 | 48 | 52 | 56 | .. | .. | 60 | .. | 57 | .. | 60 | .. | 24 | 33 | 56 | 45 | 14 | 60 | .. |
| Montana | 60 | 56 | 35 | 48 | 52 | 56 | .. | 50 | 60 | .. | 57 | 50 | 60 | .. | .. | .. | .. | 45 | 14 | 60 | .. |
| Nebraska | 60 | 56 | 34 | 48 | 52 | 56 | 70 | 50 | 60 | 50 | 57 | 55 | 60 | 60 | 24 | 33 | 56 | 45 | 14 | 60 | 80 |
| Nevada | 60 | 56 | 32 | 50 | 40 | 52 | 70 | .. | 60 | .. | .. | .. | .. | 60 | .. | .. | .. | .. | .. | .. | .. |
| N. Hampshire | 60 | 56 | 32 | .. | .. | 56 | .. | 50 | 60 | .. | .. | .. | 60 | 60 | .. | .. | .. | .. | .. | .. | .. |
| New Jersey | 60 | 56 | 30 | 48 | 50 | 56 | .. | .. | 60 | 54 | 57 | .. | 60 | 60 | 25 | 33 | 55 | .. | .. | 64 | .. |
| New York | 60 | 56 | 32 | 48 | 48 | 56 | .. | .. | 60 | .. | .. | .. | 62 | 60 | .. | .. | 55 | 44 | .. | 60 | .. |
| North Carolina | 60 | 56 | 30 | 48 | 50 | 54 | .. | 46 | .. | .. | .. | .. | .. | 50 | .. | .. | .. | .. | .. | 64 | .. |
| Ohio | 60 | 56 | 32 | 48 | 50 | 56 | 70 | .. | 60 | 50 | 50 | .. | 60 | 60 | 22 | 33 | 56 | 45 | .. | 60 | .. |
| Oregon | 60 | 56 | 36 | 46 | 42 | 56 | .. | .. | 60 | .. | .. | .. | .. | .. | 28 | 28 | .. | .. | .. | 60 | .. |
| Pennsylvania | 60 | 56 | 30 | 47 | 48 | 56 | .. | .. | 56 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 62 | .. |
| Rhode Island | .. | 56 | 32 | 48 | .. | 56 | .. | 50 | 60 | .. | 50 | .. | 60 | 60 | .. | .. | .. | .. | .. | .. | .. |
| South Carolina | 60 | 56 | 33 | 48 | 56 | 56 | 70 | 50 | 60 | 50 | 57 | .. | 60 | 60 | 26 | 33 | 44 | .. | 14 | 60 | .. |
| Tennessee | .. | 56 | 32 | 48 | 50 | 56 | 72 | 50 | 60 | 50 | 56 | .. | 60 | 60 | 26 | .. | 56 | 45 | 14 | .. | .. |
| Vermont | 60 | 56 | 32 | 48 | 46 | 56 | .. | .. | 60 | .. | 52 | 60 | 60 | 60 | .. | .. | .. | 45 | .. | 60 | .. |
| Virginia | 60 | 56 | 32 | 48 | 52 | 56 | 70 | 50 | 60 | 56 | 57 | 55 | 60 | 60 | 28 | 32 | 56 | 45 | 14 | 60 | 80 |
| Washington T. | 60 | 56 | 36 | 45 | 42 | 56 | .. | .. | 50 | .. | 50 | 50 | 60 | 60 | 28 | 28 | .. | 40 | .. | 60 | .. |
| West Virginia | 60 | 56 | 32 | 48 | 52 | 56 | .. | .. | 60 | .. | .. | .. | 60 | .. | 25 | 33 | 56 | 45 | .. | 60 | .. |
| Wisconsin | 60 | 56 | 32 | 48 | 50 | 56 | 70 | .. | 60 | .. | 50 | 42 | 60 | .. | 28 | 28 | 56 | 45 | .. | 60 | .. |

* Some States, not here mentioned, only legalize and recognize the Standard United States bushel, without reference to weight.

## THE HIGHEST MOUNTAINS OF THE WORLD.

| Names of Mountains. | Country. | Feet. | Miles. |
|---|---|---|---|
| Mount Everest (Himalayas) | Thibet | 29,002 | 5½ |
| Sorata, the highest mountain in America | Bolivia | 25,380 | 5 |
| Illimani | Bolivia | 21,780 | 4⅛ |
| Chimborazo | Ecuador | 21,444 | 4⅛ |
| Hindoo-Koosh | Afghanistan | 20,600 | 3¾ |
| Cotopaxi, highest volcano in the world | Ecuador | 19,408 | 3⅜ |
| Antisana | Ecuador | 19,150 | 3⅜ |
| St. Elias, highest mountain in N. America | Canada | 18,000 | 3⅜ |
| Popocotepetl, volcano | Mexico | 17,735 | 3⅜ |
| Mt. Roa, highest mountain in Oceanica | Hawaii | 16,000 | 3 |
| Mt. Brown, highest peak Rocky Mountains, | Canada | 15,900 | 3 |
| Mont Blanc, highest mount. in Europe, Alps, | Savoy | 15,766 | 3 |
| Mont Rosa, next highest peak of Alps | Savoy | 15,380 | 3 |
| Limit of perpetual snow at the | Equator | 15,207 | 2⅞ |
| Pinchinca | Ecuador | 15,200 | 2¾ |
| Mount Whitney | California | 15,000 | 2⅞ |
| Mount Fairweather | Alaska | 14,796 | 2¾ |
| Mount Shasta | California | 14,450 | 2⅞ |
| Pike's Peak | Colorado | 14,320 | 2¾ |
| Demavend, highest of Elburz Mts., volcano, | Persia | 14,000 | 2⅝ |
| Mount Ophir | Sumatra | 13,800 | 2⅝ |
| Fremont's Peak, Rocky Mountains | Wyoming | 13,570 | 2⅝ |
| Long's Peak, Rocky Mountains | Colorado | 13,400 | 2½ |
| Mount Ranier | Wash. Territory | 13,000 | 2½ |
| Mount Ararat | Armenia | 12,700 | 2⅜ |
| Peak of Teneriffe | Canary Islands | 12,236 | 2¼ |
| Miltsin, highest of Atlas Mountains | Morocco | 12,000 | 2¼ |
| Mount Hood | Oregon | 11,570 | 2¼ |
| Mount Lebanon | Syria | 11,000 | 2⅛ |
| Mount Perdu, highest of the Pyrenees | France | 10,950 | 2 |
| Mount St. Helen's | Oregon | 10,150 | 1⅞ |
| Mount Ætna, volcano | Sicily | 10,050 | 1⅞ |
| Monte Corno, highest of the Appenines | Naples | 9,523 | 1¾ |
| Sneehattan, highest Dovrefield mountains | Norway | 8,115 | 1½ |
| Mount Sinai | Arabia | 8,000 | 1½ |
| Pindus, highest mountain in | Greece | 7,677 | 1½ |
| Black Mountain, highest mountain in | North Carolina | 6,476 | 1¼ |
| Mount Washington, highest White Mount's, | New Hampshire | 6,234 | 1¼ |
| Mount Marcy, highest mountain in | New York | 5,467 | 1 |
| Mount Hecla, volcano | Iceland | 5,000 | 1 |
| Ben Nevis, highest mount. in Great Britain, | Scotland | 4,379 | ⅞ |
| Mount Mansfield, highest of Green Mount's, | Vermont | 4,280 | ⅞ |
| Peaks of Otter | Virginia | 4,260 | ⅞ |
| Mount Vesuvius | Naples | 3,932 | ¾ |
| Round Top, highest of Catskill Mountains | New York | 3,804 | ¾ |

## NUMBER OF PLANTS AND QUANTITY OF SEED TO USE.

*Asparagus roots.*—1000 plants to bed 4 by 225 feet.
*Beans.*—1 qt. plants 150 feet of row.
*Beets.*—1 ounce plants 150 ft. of row.
*Cabbage.*—1 ounce gives 2,500 plants.
*Celery.*—1 ounce gives 7,000 plants.
*Cucumber.*—1 ounce for 150 hills.
*Lettuce.*—1 ounce gives 7,000 plants.
*Melon.*—1 ounce for 120 hills.
*Onion.*—Four pounds to the acre.
*Radish.*—1 ounce to 100 ft. of ground
*Spinach.*—1 ounce to 250 ft. of row.
*Squash.*—1 ounce to 75 hills.
*Tomato.*—1 ounce gives 2,500 plants
*Turnip.*—1½ pounds to the acre.

## THE OCEANS, SEAS, BAYS, AND LAKES OF THE WORLD.

| Oceans. | Sq. Miles. |
|---|---|
| Pacific, about | 80,000,000 |
| Atlantic, " | 40,000,000 |
| Indian, " | 20,000,000 |
| Southern, " | 10,000,000 |
| Arctic, " | 5,000,000 |

Note.—The seas, bays, gulfs, &c., connected with each ocean, are included in the foregoing estimate. It may be proper to remark, however, that the exact superficial extent of the several oceans is not known with certainty, nor the exact proportion of land and water.

| Seas. | Length in Miles. |
|---|---|
| Mediterranean, about | 2,000 |
| Caribbean, about | 1,800 |
| China, " | 1,700 |
| Red, " | 1,400 |
| Japan, " | 1,000 |
| Black, " | 932 |
| Caspian, " | 640 |
| Baltic, " | 600 |
| Okhotsk, " | 600 |
| White, " | 450 |
| Aral, " | 250 |

| Bays. | Length. Miles. |
|---|---|
| Hudson's, about | 1,200 |
| Baffin's, " | 600 |
| Chesapeake, " | 250 |

| Lakes. | Length. Miles. | Width. Miles. |
|---|---|---|
| Superior | 380 | 120 |
| Baikal | 360 | 35 |
| Michigan | 330 | 60 |
| Great Slave | 300 | 45 |
| Huron | 250 | 90 |
| Winnipeg | 240 | 40 |
| Erie | 270 | 50 |
| Athabasca | 200 | 20 |
| Ontario | 180 | 40 |
| Maracaybo | 150 | 60 |
| Great Bear | 150 | 40 |
| Ladoga | 125 | 75 |
| Champlain | 123 | 12 |
| Nicaragua | 120 | 40 |
| Lake of the Woods | 70 | 25 |
| Geneva | 50 | 10 |
| Constance | 45 | 10 |
| Cayuga | 36 | 4 |
| George | 36 | 3 |

## THE LONGEST RIVERS OF THE WORLD.

| Rivers. | Locality. | Rise. | Discharge. | Miles. |
|---|---|---|---|---|
| Missouri | N.America | Rocky Mountains | Gulf of Mexico | 4,194 |
| Mississippi | N.America | Lake Itaska | Gulf of Mexico | 3,200 |
| Amazon | Brazil | Andes | Atlantic Ocean | 3,800 |
| Hoang-Ho | China | Koulkoun Mountains | Yellow Sea | 3,000 |
| Murray | Australia | Australian Alps | Encounter Bay | 3,000 |
| Obi | Siberia | Altaian Mountains | Arctic Ocean | 2,800 |
| Nile | Egypt, Nubia | Blue Nile, Abyssinia | Mediterranean | 2,750 |
| Yang-tse-Kia | China | Thibet | China Sea | 2,500 |
| Lena | Siberia | Heights of Irkutsk | Arctic Ocean | 2,500 |
| Niger | Soudan | Base of Mt. Loma | Gulf of Guinea | 2,300 |
| St. Lawrence | Canada | River St. Louis | Glf.St.Lawrence | 1,960 |
| Volga | Russia | Lake in Volhonsky | Caspian Sea | 1,900 |
| Maykiang | Siam | Thibet | Chinese Gulf | 1,700 |
| Indus | Hindostan | Little Thibet | Arabian Sea | 1,700 |
| Danube | Germany | Black Forest | Black Sea | 1,630 |
| Mackenzie | N.America | River Athabasca | Arctic Ocean | 2,500 |
| Brahmapootra | Thibet | Himalaya | Bay of Bengal | 1,500 |
| Columbia | N.America | Rocky Mountains | Pacific Ocean | 1,090 |
| Colorado | N.America | San Iaba | Gulf of Califor'a | 1,000 |
| Susquehanna | N.America | Lake Otsego | Chesapeake Bay | 400 |
| James | N.America | Allegheny Mountains | Chesapeake Bay | 500 |
| Potomac | N.America | Gt.Black Bone Mount'n | Chesapeake Bay | 400 |
| Hudson | N.America | Adirondacks, Mt. Marcy | Bay of N.York | 325 |

## STATISTICS OF CHURCHES IN THE UNITED STATES.

| Denominations. | Church Organizations. | Church Edifices | Church Sittings. | Church Property |
|---|---|---|---|---|
| Baptist (regular) | 14,474 | 12,827 | 3,997,116 | $39,229,221 |
| Baptist (other) | 1,355 | 1,105 | 363,019 | 2,378,977 |
| Christian | 3,578 | 2,822 | 865,602 | 6,425,137 |
| Congregational | 2,887 | 2,715 | 1,117,212 | 25,069,698 |
| Episcopal (Protestant) | 2,835 | 2,601 | 991,051 | 36,514,549 |
| Evangelical Association | 815 | 641 | 193,796 | 2,301,650 |
| Friends | 692 | 662 | 224,664 | 3,939,560 |
| Jewish | 189 | 152 | 73,265 | 5,155,234 |
| Lutheran | 3,032 | 2,776 | 977,332 | 14,917,747 |
| Methodist | 25,278 | 21,337 | 6,528,209 | 69,854,121 |
| Miscellaneous | 27 | 17 | 6,935 | 135,650 |
| Moravian (Unitas Fratrum) | 72 | 67 | 25,700 | 709,100 |
| Mormon | 189 | 171 | 87,838 | 656,750 |
| New Jerusalem (Swedenborgian) | 90 | 61 | 18,755 | 869,700 |
| Presbyterian (regular) | 6,262 | 5,683 | 2,198,900 | 47,828,732 |
| Presbyterian (other) | 1,562 | 1,388 | 499,344 | 5,436,524 |
| Reformed Church in America (late Dutch Reformed) | 471 | 468 | 227,228 | 10,359,255 |
| Reformed Church in the United States (late German Reformed) | 1,256 | 1,145 | 431,700 | 5,775,215 |
| Roman Catholic | 4,127 | 3,806 | 1,990,514 | 60,985,566 |
| Second Advent | 225 | 140 | 34,555 | 306,240 |
| Shaker | 18 | 18 | 8,850 | 86,900 |
| Spiritualist | 95 | 22 | 6,970 | 100,150 |
| Unitarian | 331 | 310 | 155,471 | 6,282,675 |
| United Brethren in Christ | 1,445 | 937 | 265,025 | 1,819,810 |
| Universalist | 719 | 602 | 210,884 | 5,692,325 |
| Unknown (Local Missions) | 26 | 27 | 11,925 | 687,800 |
| Unknown (Union) | 409 | 552 | 153,202 | 965,295 |
| Total—All Denominations | 72,459 | 63,082 | 21,665,062 | $354,483,581 |

## GENERAL COUNCILS.

| | A.D. | | A.D. |
|---|---|---|---|
| *Jerusalem*.....Against Judaizers | 51 | *Rome*.....Third Lateran | 1179 |
| *Arles*.....Against Donatists | 314 | *Rome*.....Fourth " | 1215 |
| *Nice*.....First Œcumenical | 325 | *Lyons*.....Empe'r Frederick deposed | 1243 |
| *Constantinople*, Arian | 337 | *Lyons*.....Reunion of Greek | |
| *Rome*.....Athanasian | 342 | Latin churches | 1274 |
| *Sardis*.....Against Arius | 347 | *Vienna*.....15th Œcumenical | 1312 |
| *Constantinople*, Second Œcumen'l | 381 | *Pisa*.....Popes Elected & Deposed | 1409 |
| *Ephesus*.....Third " | 431 | *Constance*.....Huss condemned to be burnt | 1414 |
| *Chalcedon*.....Fourth " | 451 | *Basle*.....18th Œcumenical | 1431 |
| *Constantinople*, Fifth " | 553 | *Rome*.....Fifth Lateran | 1512–17 |
| *Constantinople*, Sixth " | 681 | *Trent*.....Œcumenical | 1545–63 |
| *Nice*.....Seventh " | 787 | *Rome*.....Œcumenical | 1869–70 |
| *Constantinople*, Eighth " | 870 | | |
| *Rome*.....First Lateran | 1123 | | |
| *Rome*.....Second " | 1139 | | |

## PRICES OF COMMODITIES FOR FIFTY-THREE YEARS,—1825-77.

*Showing the Average Price of the Articles named in the New York Market, in the month of January of each year.*

| Year. | Beef, Mess. | Butter. | Wheat. | Coal, Anthracite. | Coffee, Brazil. | Corn. | Cotton, Upland | Flour, West'n. | Hams. | Sugar, Raw. | Iron, Bar. | Iron, Scotch Pig. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bbl. | lb | Bush. | Ton. | lb | Bush. | lb | Bbl. | lb | lb | Ton. | Ton. |
| 1825 | 8 78 | 15 | 1 01 | 10 00 | 16½ | 42 | 14 | 5 13 | 9¼ | 8¾ | 87 50 | 42 50 |
| 1826 | 9 16 | 15¼ | 90 | 12 00 | 16½ | 74 | 13½ | 4 80 | 9½ | 9 | 97 50 | 65 00 |
| 1827 | 9 02 | 17½ | 93 | 12 00 | 14½ | 70 | 9½ | 5 14 | 10¼ | 8 | 92 50 | 50 00 |
| 1828 | 9 14 | 15½ | 1 15 | 11 50 | 14½ | 57 | 9 | 5 58 | 9¼ | 8 | 82 50 | 51 00 |
| 1829 | 9 21 | 13¾ | 1 63 | 11 50 | 12½ | 59 | 10 | 6 45 | 9½ | 8 | 80 00 | 52 50 |
| 1830 | 8 99 | 13½ | 1 04 | 12 00 | 12 | 54 | 9½ | 4 98½ | 9¾ | 7½ | 73 75 | 45 00 |
| 1831 | 8 50 | 14¾ | 1 25 | 7 50 | 10 | 58½ | 10 | 5 71 | 10¾ | 6 | 76 25 | 42 50 |
| 1832 | 9 46 | 15½ | 1 26 | 12 50 | 13 | 75 | 8½ | 5 76½ | 9½ | 5½ | 72 00 | 43 75 |
| 1833 | 9 38 | 15½ | 1 19¼ | 9 25 | 13 | 81½ | 10½ | 5 56½ | 9½ | 7 | 75 00 | 42 50 |
| 1834 | 9 17 | 14 | 1 06 | 6 00 | 11½ | 59½ | 11 | 4 98 | 9¼ | 7½ | 75 00 | 42 75 |
| 1835 | 11 08 | 17½ | 1 05 | 6 00 | 11½ | 74 | 16½ | 5 86½ | 9¾ | 6½ | 68 75 | 40 25 |
| 1836 | 10 97 | 19½ | 1 78 | 8 00 | 11½ | 90½ | 15 | 7 49½ | 12¾ | 7½ | 75 00 | 40 25 |
| 1837 | 13 49 | 19 | 1 77½ | 10 50 | 11 | 1 06 | 16 | 9 14 | 12½ | 7½ | 98 75 | 65 00 |
| 1838 | 14 70 | 20 | 1 92 | 9 00 | 10½ | 86 | 11½ | 7 96 | 12¼ | 6½ | 87 50 | 52 50 |
| 1839 | 14 81 | 19 | 1 24½ | 8 25 | 10½ | 92 | 14 | 7 30 | 11¾ | 6½ | 88 75 | 38 75 |
| 1840 | 13 02 | 17½ | 1 06 | 7 50 | 10 | 59½ | 8½ | 5 29½ | 10 | 5½ | 82 50 | 38 75 |
| 1841 | 9 01 | 11½ | 1 03 | 8 00 | 10½ | 52 | 9½ | 5 58½ | 7¾ | 6 | 73 75 | 36 25 |
| 1842 | 7 39 | 11¼ | 1 25 | 8 50 | 9 | 67 | 8½ | 5 57 | 6¼ | 6 | 61 25 | 34 50 |
| 1843 | 7 15 | 8½ | 88½ | 5 75 | 8½ | 59½ | 7 | 4 85½ | 8 | 4 | 58 75 | 27 25 |
| 1844 | 5 62 | 10¼ | 1 00 | 5 25 | 6½ | 43 | 8 | 4 67 | 9 | 6½ | 57 50 | 32 00 |
| 1845 | 8 21 | 13½ | 1 02½ | 5 50 | 6½ | 51½ | 5 | 4 93½ | 6 | 4 | 63 75 | 30 50 |
| 1846 | 7 54 | 13 | 1 31 | 5 50 | 7½ | 74 | 6½ | 5 06 | 6½ | 6 | 78 75 | 39 00 |
| 1847 | 11 44 | 16 | 1 02½ | 6 50 | 7½ | 80 | 10 | 6 68½ | 10¾ | 6½ | 76 25 | 33 50 |
| 1848 | 9 88 | 16 | 1 25 | 5 75 | 7 | 77 | 7½ | 5 96 | 7¾ | 5 | 70 00 | 36 25 |
| 1849 | 11 68 | 15 | 1 22½ | 5 25 | 5½ | 64½ | 6 | 5 51 | 8½ | 4½ | 50 00 | 25 50 |
| 1850 | 9 08 | 15⅜ | 1 25 | 5 75 | 11½ | 61 | 11 | 5 55 | 8 | 4½ | 43 75 | 23 50 |
| 1851 | 8 86 | 14½ | 1 20 | 6 75 | 10½ | 64½ | 13½ | 4 52 | 8 | 5½ | 40 50 | 22 25 |
| 1852 | 10 72 | 18¾ | 1 09 | 5 25 | 8½ | 70½ | 8 | 5 00 | 9½ | 5 | 34 50 | 20 15 |
| 1853 | 8 87 | 18 | 1 32 | 5 25 | 8½ | 68½ | 9½ | 5 78 | 8¾ | 5 | 67 50 | 31 00 |
| 1854 | 10 94 | 19½ | 2 04 | 6 75 | 11½ | 82½ | 10 | 8 89½ | 7¾ | 4½ | 67 50 | 38 00 |
| 1855 | 11 47 | 22¼ | 2 57 | 7 25 | 9 | 1 01 | 7 | 8 76 | 8¾ | 4½ | 58 25 | 28 75 |
| 1856 | 8 57 | 22½ | 2 14 | 5 95 | 10½ | 93 | 9 | 6 42 | 9 | 8½ | 60 50 | 32 50 |
| 1857 | 12 87 | 22½ | 1 75 | 6 50 | 8½ | 73½ | 13 | 5 78½ | 10½ | 10 | 56 25 | 30 50 |
| 1858 | 10 48 | 18½ | 1 37 | 5 50 | 7½ | 61 | 9 | 4 29½ | 8½ | 6½ | 53 75 | 26 50 |
| 1859 | 7 59 | 19 | 1 40 | 5 25 | 13½ | 80½ | 11 | 4 11 | 8¾ | 6½ | 46 50 | 26 50 |
| 1860 | 9 00 | 16 | 1 45 | 5 50 | 15 | 91½ | 11 | 4 30 | 9¼ | 7½ | 42 25 | 24 50 |
| 1861 | 6 00 | 14 | 1 44 | 5 75 | 28½ | 73 | 12 | 5 35 | 8 | 5½ | 41 25 | 20 50 |
| 1862 | 5 50 | 15 | 1 38 | 4 75 | 19½ | 67 | 37 | 5 50 | 6 | 8½ | 53 00 | 22 00 |
| 1863 | 12 00 | 22 | 1 53 | 8 50 | 21½ | 75 | 66½ | 6 05 | 8 | 9 | 78 75 | 33 60 |
| 1864 | 14 00 | 24 | 1 82½ | 9 75 | 31 | 1 26 | 75 | 7 00 | 11 | 13½ | 105 00 | 44 00 |
| 1865 | 20 50 | 45 | 1 85 | 10 00 | 44 | 1 95 | 70 | 10 00 | 20 | 19½ | 125 00 | 50 00 |
| 1866 | 20 00 | 30 | 1 87½ | 8 50 | 45 | 95½ | 51½ | 8 75 | 16½ | 11¾ | 94 00 | 51 50 |
| 1867 | 18 00 | 30 | 3 00 | 5 50 | 18¼ | 1 16½ | 29 | 11 00 | 12¼ | 10 | 90 00 | 47 00 |
| 1868 | 32 00 | 45 | 2 45 | 5 00 | 11½ | 1 20 | 16 | 9 55 | 12 | 11½ | 85 00 | 36 00 |
| 1869 | 28 00 | 40 | 1 70 | 5 50 | 11 | 90 | 26 | 6 00 | 15¼ | 11½ | 85 00 | 40 50 |
| 1870 | 27 00 | 30 | 1 30 | 5 50 | 10½ | 1 12 | 25⅝ | 4 85 | 15 | 10½ | 75 00 | 33 00 |
| 1871 | 27 00 | 20 | 1 42 | 9 00 | 12 | 80 | 15¼ | 6 25 | 11 | 11½ | 75 00 | 34 00 |
| 1872 | 21 00 | 15 | 1 50 | 4 50 | 16 | 78 | 20 | 6 40 | 9¾ | 11 | 105 00 | 34 00 |
| 1873 | 21 00 | 16 | 1 67 | 6 00 | 17¼ | 66 | 20½ | 6 25 | 9½ | 9¾ | 110 00 | 48 00 |
| 1874 | 22 00 | 27 | 1 65 | 6 00 | 19 | 84 | 16¼ | 6 00 | 10 | 7¾ | 160 00 | 42 00 |
| 1875 | 21 00 | 29 | 1 25 | 5 25 | 19 | 97 | 14⅛ | 4 50 | 11 | 8 | 135 00 | 38 00 |
| 1876 | 23 00 | 26 | 1 30 | 5 50 | 18 | 71 | 13½ | 4 35 | 12½ | 8 | 135 00 | 32 00 |
| 1877 | 20 00 | 28 | 1 47 | 3 00 | 20 | 59 | 12½ | 5 50 | 10½ | 9⅝ | 131 00 | 27 50 |

## RATE OF MORTALITY IN AMERICAN CITIES.—NUMBER OF DEATHS PER ANNUM OUT OF 1,000 INHABITANTS.

| | 1875. 9 months. | 1876. 1 year. | 1877. 1 year. | 1878. 10 mos. |
|---|---|---|---|---|
| Baltimore | 21.23 | 21.26 | 21.25 | 19.19 |
| Boston | 25. | 23.58 | 20.43 | 20.85 |
| Brooklyn | 25.91 | 24.92 | 21.61 | 20.23 |
| Buffalo, N. Y | .... | 16.61 | 10.43 | .... |
| Charleston, S. C | 34.60 | 30.72 | 24.34 | 28.96 |
| Chicago | 20.29 | 20.42 | 18.24 | 15.75 |
| Cincinnati | 20.39 | 23.10 | 17.81 | 16.59 |
| Dayton, O | 14.22 | 14.04 | 12.29 | 13.07 |
| Detroit, Mich | .... | 15.97 | 14. | .... |
| Elmira, N. Y | 17.01 | 15.56 | 14.53 | 18.66 |
| Erie, Pa | 18.74 | 13.40 | 13.71 | 13.10 |
| Knoxville, Tenn | 14.25 | 12.92 | 14.72 | .... |
| Memphis, Tenn | 29.79 | 24.78 | 26.06 | .... |
| Mobile, Ala | 22. | 24.34 | 24.14 | 21.19 |
| Milwaukee, Wis | 14.64 | 18.78 | 16.84 | 13.43 |
| Nashville, Tenn | 43.17 | 31.82 | 29.57 | 21.77 |
| Newark, N. J | 20.29 | 27.15 | 23.17 | .... |
| New Haven, Conn | 20.79 | 17.89 | 19.66 | 18.18 |
| New Orleans, La | 27.80 | 26.89 | 34.83 | 32.42 |
| New York | 29.79 | 27.23 | 24.36 | 25.47 |
| Paterson, N. J | 30.94 | 26.72 | 24.28 | 21.24 |
| Petersburg, Va | 31.06 | 31.31 | 24.46 | .... |
| Philadelphia | 24.35 | 24.51 | 19.02 | 18.20 |
| Pittsburgh, Pa | 21.69 | 21.90 | 23.87 | 23.41 |
| Providence, R. I | 18.94 | 18.30 | 18.81 | 19.47 |
| Reading, Pa | 19.55 | 27.95 | 22.50 | .... |
| Richmond, Va | 24.97 | 22.18 | 21.93 | 19.05 |
| Rochester, N. Y | 24.39 | 21.27 | 18.41 | 14.82 |
| San Francisco | 19.28 | 18.89 | 19.86 | 15.56 |
| Selma, Ala | 22.53 | 16.87 | 19.62 | 30.81 |
| St. Louis | 16.19 | 13.48 | 11.69 | 12.43 |
| Syracuse, N. Y | .... | 10.26 | 13.20 | 11.33 |
| Toledo, O | 24.90 | 14.80 | 13.54 | 12.32 |
| Washington, D. C | 29.03 | 25.81 | 24.39 | 27.28 |
| Wheeling, W. Va | 18.06 | 21.35 | 16.78 | .... |
| Yonkers, N. Y | 19.29 | 23.37 | 17.81 | 14.40 |

## AMERICAN PETROLEUM.

Twenty years ago this article was little known. The first artificial well was sunk in August, 1859. Now there is an annual production in this country of about 15,000,000 barrels (600,000,000 gallons), and from $40,000,000 to $60,000,000 worth is exported to other countries annually,—our exports ranging in importance, according to valuation—first, cotton; second, flour and grain; third, hog products (lard, hams, and salt pork); and fourth, petroleum. There are more than 10,000 oil-wells flowing or being sunk, and probably over $10,000,000 invested in the business, in one way and another. Fifteen million barrels (forty gallons to a barrel) of this oil would fill 9,600,000,000 lamps holding half a pint each, or about seven such lamps for every man, woman, and child on our globe. All this has *come to light*, from the bowels of the earth, in less than twenty years, during which time we have not only used all the petroleum we have wanted ourselves, but have sent to other lands nearly $500,000,000 worth, at the custom-house valuation.

## NEWSPAPERS AND PERIODICALS IN THE UNITED STATES, 1850-1880.

| States and Territories. | 1850. | | 1860. | | 1870. | | 1880. |
|---|---|---|---|---|---|---|---|
| | No. | Circulation. | No. | Circulation. | No. | Circulation. | No. |
| Alabama | 60 | 34,282 | 96 | 93,595 | 89 | 91,165 | 114 |
| Arizona | .. | ..... | .. | ..... | 1 | 280 | 19 |
| Arkansas | 9 | 7,250 | 37 | 39,812 | 56 | 29,830 | 103 |
| California | 7 | 4,619 | 121 | 229,893 | 201 | 491,903 | 310 |
| Colorado | .. | ..... | .. | ..... | 14 | 12,750 | 81 |
| Connecticut | 46 | 52,670 | 55 | 95,536 | 71 | 203,725 | 128 |
| Dakota | .. | ..... | .. | ..... | 3 | 1,652 | 67 |
| Delaware | 10 | 7,500 | 14 | 16,144 | 17 | 20,860 | 24 |
| Distr't of Columbia | 18 | 100,073 | 13 | 69,510 | 22 | 81,400 | 39 |
| Florida | 10 | 5,750 | 22 | 15,500 | 23 | 10,545 | 40 |
| Georgia | 51 | 64,155 | 105 | 180,972 | 110 | 150,987 | 186 |
| Idaho | .. | ..... | .. | ..... | 6 | 2,750 | 11 |
| Illinois | 107 | 88,050 | 286 | 356,159 | 505 | 1,722,541 | 863 |
| Indiana | 107 | 63,138 | 186 | 159,381 | 293 | 363,542 | 429 |
| Iowa | 29 | 22,500 | 130 | 89,240 | 233 | 219,090 | 518 |
| Kansas | .. | ..... | 27 | 21,920 | 97 | 96,803 | 303 |
| Kentucky | 62 | 79,868 | 77 | 179,597 | 89 | 197,130 | 183 |
| Louisiana | 55 | 80,288 | 81 | 120,650 | 92 | 84,165 | 100 |
| Maine | 49 | 63,439 | 70 | 126,169 | 65 | 170,690 | 103 |
| Maryland | 68 | 124,779 | 57 | 122,244 | 88 | 235,450 | 138 |
| Massachusetts | 209 | 718,221 | 222 | 1,368,980 | 259 | 1,692,124 | 392 |
| Michigan | 58 | 52,690 | 118 | 128,848 | 211 | 253,774 | 418 |
| Minnesota | .. | ..... | 49 | 32,554 | 95 | 110,778 | 209 |
| Mississippi | 50 | 30,555 | 73 | 88,737 | 111 | 71,868 | 106 |
| Missouri | 61 | 70,235 | 173 | 354,007 | 279 | 522,866 | 471 |
| Montana | .. | ..... | .. | ..... | 10 | 19,580 | 16 |
| Nebraska | .. | ..... | 14 | 9,750 | 42 | 31,600 | 179 |
| Nevada | .. | ..... | .. | ..... | 12 | 11,300 | 31 |
| New Hampshire | 38 | 60,226 | 20 | 19,700 | 51 | 173,919 | 82 |
| New Jersey | 51 | 44,521 | 90 | 162,016 | 122 | 205,500 | 200 |
| New Mexico | 2 | 1,150 | 2 | 1,150 | 5 | 1,525 | 18 |
| New York | 428 | 1,624,576 | 542 | 6,034,636 | 835 | 7,561,497 | 1,241 |
| North Carolina | 51 | 35,252 | 74 | 79,374 | 64 | 64,820 | 121 |
| Ohio | 261 | 389,463 | 340 | 1,121,682 | 395 | 1,388,367 | 660 |
| Oregon | 2 | 1,134 | 16 | 27,620 | 35 | 45,750 | 64 |
| Pennsylvania | 310 | 984,777 | 367 | 1,432,695 | 540 | 3,419,765 | 866 |
| Rhode Island | 19 | 24,472 | 26 | 49,690 | 32 | 82,050 | 37 |
| South Carolina | 46 | 53,743 | 45 | 53,870 | 55 | 80,900 | 77 |
| Tennessee | 50 | 67,672 | 83 | 176,908 | 91 | 225,952 | 170 |
| Texas | 34 | 18,205 | 89 | 108,038 | 112 | 55,250 | 254 |
| Utah | .. | ..... | 2 | 6,300 | 10 | 14,250 | 17 |
| Vermont | 35 | 45,961 | 31 | 47,415 | 47 | 71,390 | 76 |
| Virginia* | 87 | 87,768 | 139 | 301,622 | 114 | 143,840 | 177 |
| Washington Ter'ry | .. | ..... | 4 | 2,350 | 14 | 6,785 | 27 |
| West Virginia* | .. | ..... | .. | ..... | 59 | 54,432 | 99 |
| Wisconsin | 46 | 33,015 | 155 | 139,145 | 190 | 343,385 | 319 |
| Wyoming | .. | ..... | .. | ..... | 6 | 1,950 | 10 |
| Total | 2,526 | 5,142,177 | 4,051 | 13,663,409 | 5,871 | 20,842,475 | 10,101 |

* In 1850 and 1860 Virginia included West Virginia.

# TABLE OF WAGES BY THE DAY.

COMPUTED ON A BASIS OF TEN HOURS' LABOR PER DAY.

| | 25c. | 37½c. | 50c. | 62½c. | 75c. | 87½c. | $1.00 | 1.12½ | $1.25 | 1.37½ | $1.50 | 1.62½ | $1.75 | 1.87½ | $2.00 | 2.12½ | $2.25 | 2.37½ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ½ hr. | 1¼ | 1⅞ | 2½ | 3⅛ | 3¾ | 4⅜ | 5 | 5⅝ | 6¼ | 6⅞ | 7½ | 8⅛ | 8¾ | 9⅜ | 10 | 10⅝ | 11¼ | 11⅞ |
| 1 " | 2½ | 3¾ | 5 | 6¼ | 7½ | 8¾ | 10 | 11¼ | 12½ | 13¾ | 15 | 16¼ | 17½ | 18¾ | 20 | 21¼ | 22½ | 23¾ |
| 2 hrs. | 5 | 7½ | 10 | 12½ | 15 | 17½ | 20 | 22½ | 25 | 27½ | 30 | 32½ | 35 | 37½ | 40 | 42½ | 45 | 47½ |
| 3 " | 7½ | 11¼ | 15 | 18¾ | 22½ | 26¼ | 30 | 33¾ | 37½ | 41¼ | 45 | 48¾ | 52½ | 56¼ | 60 | 63¾ | 67½ | 71¼ |
| 4 " | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 |
| 5 " | 12½ | 18¾ | 25 | 31¼ | 37½ | 43¾ | 50 | 56¼ | 62½ | 68¾ | 75 | 81¼ | 87½ | 93¾ | $1.00 | $1.06¼ | $1.12½ | $1.18¾ |
| 6 " | 15 | 22½ | 30 | 37½ | 45 | 52½ | 60 | 67½ | 75 | 82½ | 90 | 97½ | $1.05 | $1.12½ | 1.20 | 1.27½ | 1.35 | 1.42½ |
| 7 " | 17½ | 26¼ | 35 | 43¾ | 52½ | 61¼ | 70 | 78¾ | 87½ | 96¼ | $1.05 | $1.13¾ | 1.22½ | 1.31¼ | 1.40 | 1.48¾ | 1.57½ | 1.66¼ |
| 8 " | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | $1.00 | $1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 | 1.90 |
| 9 " | 22¾ | 33¾ | 45 | 56¼ | 67½ | 78¾ | 90 | $1.01¼ | 1.12½ | 1.23¾ | 1.35 | 1.46¼ | 1.57½ | 1.68¾ | 1.80 | 1.91¼ | 2.02½ | 2.13¾ |
| 1 day. | 25 | 37½ | 50 | 62½ | 75 | 87½ | $1.00 | $1.12½ | $1.25 | $1.37½ | $1.50 | $1.62½ | $1.75 | $1.87½ | $2.00 | $2.12½ | $2.25 | $2.37½ |
| 2 dys. | 50 | 75 | 1.00 | $1.25 | $1.50 | $1.75 | 2.00 | 2.25 | 2.50 | 2.75 | 3.00 | 3.25 | 3.50 | 3.75 | 4.00 | 4.25 | 4.50 | 4.75 |
| 3 " | 75 | $1.12½ | 1.50 | 1.87½ | 2.25 | 2.62½ | 3.00 | 3.37½ | 3.75 | 4.12½ | 4 50 | 4.87½ | 5.25 | 5.62½ | 6.00 | 6.37½ | 6.75 | 7.12½ |
| 4 " | $1.00 | 1.50 | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 5.50 | 6.00 | 6.50 | 7.00 | 7.50 | 8.00 | 8.50 | 9.00 | 9.50 |
| 5 " | 1.25 | 1.87½ | 2.50 | 3.12½ | 3.75 | 4.37½ | 5.00 | 5.62½ | 6.25 | 6.87½ | 7.50 | 8.12½ | 8.75 | 9.37½ | 10.00 | 10.62½ | 11.25 | 11.87½ |
| 6 " | 1.50 | 2.25 | 3.00 | 3.75 | 4.50 | 5.25 | 6.00 | 6.75 | 7.50 | 8.25 | 9.00 | 9.75 | 10.50 | 11.25 | 12.00 | 12.75 | 13.50 | 14.25 |

**Explanation.**—The large figures at the top of the columns show the rate of wages per day, and the smaller figures the rate per hour or per day. For example, to find the rate per hour at **$1.50** per day, begin with the figure **1**, in the left-hand column showing the number of hours, and trace toward the right to the column headed by **$1.50**, where 15 cents is found, the rate of pay for one hour's labor at $1.50 per day. In like manner the rate for several hours or days may be found.

# TABLE OF WAGES BY THE WEEK.

COMPUTED ON A BASIS OF TEN HOURS' LABOR PER DAY.

| | $1 | $2 | $3 | $4 | $5 | $6 | $7 | $8 | $9 | $10 | $11 | $12 | $13 | $14 | $15 | $16 | $17 | $18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ½ hr. | | 1⅔ | 2½ | 3⅓ | 4⅙ | 5 | 5 | 6⅔ | 7½ | 8⅓ | 9⅛ | 10 | 10¾ | 11⅔ | 12½ | 13⅓ | 14⅓ | 15 |
| 1 " | 1⅔ | 3⅓ | 5 | 6⅔ | 8⅓ | 10 | 11⅔ | 13⅓ | 15 | 16⅔ | 18⅓ | 20 | 21⅔ | 23⅓ | 25 | 26⅔ | 28⅓ | 13 |
| 2 hrs. | 3⅓ | 6⅔ | 10 | 13⅓ | 16⅔ | 20 | 23⅓ | 26⅔ | 30 | 33⅓ | 36⅔ | 40 | 43⅓ | 46⅔ | 50 | 53⅓ | 56⅔ | 60 |
| 3 " | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 |
| 4 " | 6⅔ | 13⅓ | 20 | 26⅔ | 33⅓ | 40 | 46⅔ | 53⅓ | 60 | 66⅔ | 73⅓ | 80 | 86⅔ | 93⅓ | $1.00 | $1.06⅔ | $1.13⅓ | $1.20 |
| 5 " | 8⅓ | 16⅔ | 25 | 33⅓ | 41⅔ | 50 | 58⅓ | 66⅔ | 75 | 83⅓ | 91⅔ | $1.00 | $1.08⅓ | $1.16⅔ | 1.25 | 1.33⅓ | 1,41⅔ | 1.50 |
| 6 " | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | $1.00 | $1.10 | 1.20 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 | 1.80 |
| 7 " | 11⅔ | 23⅓ | 35 | 46⅔ | 58⅓ | 70 | 81⅔ | 93⅓ | $1.05 | 1.16⅔ | 1.28⅓ | 1.40 | 1.51⅔ | 1.63⅓ | 1.75 | 1.86⅔ | 1.98⅓ | 2.10 |
| 8 " | 13⅓ | 26⅔ | 40 | 53⅓ | 66⅔ | 80 | 93⅓ | $1.06⅔ | 1.20 | 1.33⅓ | 1.46⅔ | 1.60 | 1.73⅓ | 1.86⅔ | 2.00 | 2.13⅓ | 2.26⅔ | 2.40 |
| 9 " | 15 | 30 | 45 | 60 | 75 | 90 | $1.05 | 1.20 | 1.35 | 1.50 | 1.65 | 1.80 | 1.95 | 2.10 | 2.25 | 2.40 | 2.55 | 2.70 |
| 1 day. | 16⅔ | 33⅓ | 50 | 66⅔ | 83⅓ | $1.00 | $1.16⅔ | $1.33⅓ | $1.50 | $1.66⅔ | $1.83⅓ | $2.00 | $2.16⅔ | $2.33⅓ | $2.50 | $2.66⅔ | $2.83⅓ | $3.00 |
| 2 dys. | 33⅓ | 66⅔ | 1.00 | $1.33⅓ | $1.66⅔ | 2.00 | 2.33⅓ | 2.66⅔ | 3.00 | 3.33⅓ | 3.66⅔ | 4.00 | 4.33⅓ | 4.66⅔ | 5.00 | 5.33⅓ | 5.66⅔ | 6.00 |
| 3 " | 50 | $1.00 | 1.50 | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 5.50 | 6.00 | 6.50 | 7.00 | 7.50 | 8.00 | 8.50 | 9.00 |
| 4 " | 66⅔ | 1.33⅓ | 2.00 | 2.66⅔ | 3.33⅓ | 4.00 | 4.66⅔ | 5.33⅓ | 6.00 | 6.66⅔ | 7.33⅓ | 8.00 | 8.66⅔ | 9.33⅓ | 10.00 | 10.66⅔ | 11.33⅓ | 12.00 |
| 5 " | 83⅓ | 1.66⅔ | 2.50 | 3.33⅓ | 4.16⅔ | 5.00 | 5.83⅓ | 6.66⅔ | 7.50 | 8.33⅓ | 9.16⅔ | 10.00 | 10.83⅓ | 11.66⅔ | 12.50 | 13.33⅓ | 14.16⅔ | 15.00 |
| 6 " | $1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 9.00 | 10.00 | 11.00 | 12.00 | 13.00 | 14.00 | 15.00 | 16.00 | 17.00 | 18.00 |

**Explanation.**—The large figures at the top of the columns show the rate of wages per week, and the smaller figures the rate per hour or per day. For example, to find the rate per hour at $8 per week, begin with the figure **1**, in the left-hand column showing the number of hours, and trace toward the right to the column headed by $8, where 13⅓ cents is found, the rate of pay for one hour's labor at $8 per week. In like manner the rate for several hours or days may be found.

## OCCUPATIONS OF THE PEOPLE OF THE UNITED STATES.

[From the Official Returns of the Tenth Census, 1880.]

| Classes, 1880. | Age and Sex. | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | All Ages. | | 10 to 15 | | 16 to 59 | | 60 and over. | |
| | Male. | Female. | Male. | Fem. | Male. | Female. | Male. | Fem. |
| Agriculture | 7,075,983 | 594,510 | 584,867 | 135,862 | 5,888,133 | 435,920 | 602,983 | 22,728 |
| Professional and Personal Services | 2,712,943 | 1,361,295 | 127,565 | 107,830 | 2,446,962 | 1,215,189 | 138,416 | 38,276 |
| Trade and Transportation | 1,750,892 | 59,364 | 26,078 | 2,547 | 1,672,171 | 54,849 | 52,643 | 1,968 |
| Manuf'g, Mechanical, and Min'g. | 3,205,124 | 631,988 | 86,677 | 46,930 | 2,978,845 | 577,157 | 139,602 | 7,901 |
| All Occupations. | 14,744,942 | 2,647,157 | 825,187 | 293,169 | 12,986,111 | 2,283,115 | 933,644 | 70,873 |

### RECAPITULATION.

| | |
|---|---|
| Persons occupied in Agriculture | 7,670,493 |
| Persons occupied in Professional and Personal Services | 4,074,238 |
| Persons occupied in Trade and Transportation | 1,810,256 |
| Persons occupied in Manufacturing, Mechanical, and Mining | 3,837,112 |
| All Occupations | 17,392,099 |

## RELIGIOUS DENOMINATIONS IN THE UNITED STATES.

| Denominations. | Churches. | Ministers. | Members. | Denominations. | Churches. | Ministers. | Members. |
|---|---|---|---|---|---|---|---|
| Adventist | 91 | 107 | 11,100 | Methodist, Independ't. | 13 | 14 | 2,100 |
| Adventist, Second | 583 | 501 | 63,500 | Methodist, Primitive | 121 | 50 | 3,370 |
| Adventist, Seventh Day | 608 | 138 | 14,733 | Methodist, Protestant | 1,501 | 2,120 | 118,170 |
| American Communities | 14 | 8 | 2,838 | Methodist, Wesleyan | 260 | 475 | 17,847 |
| Baptist | 24,794 | 15,401 | 2,133,044 | Moravian | 74 | 96 | 16,112 |
| Baptist, Anti-mission | 1,090 | 883 | 40,000 | Mormon | 654 | 3,906 | 110,377 |
| Baptist, Freewill | 1,485 | 1,286 | 76,706 | New Jerusalem (Swedenborgian) | 91 | 81 | 4,734 |
| Baptist, Seventh Day | 87 | 103 | 8,606 | Presbyterian | 5,338 | 4,920 | 573,377 |
| Baptist, Six Principle | 20 | 17 | 2,075 | Presbyterian, South | 1,928 | 1,031 | 119,970 |
| Christian (Disciples of Christ) | 4,681 | 3,658 | 567,448 | Presbyterian, Cumberland | 2,474 | 1,386 | 111,855 |
| Congregational | 3,689 | 3,589 | 383,635 | Presbyterian, Reformed | 41 | 31 | 6,020 |
| Dunkards (Brethren) | 710 | 1,665 | 90,000 | Presbyterian, United | 793 | 658 | 80,236 |
| Episcopal, Protestant | 3,049 | 3,496 | 342,590 | Reformed Church in America | 489 | 519 | 78,917 |
| Episcopal, Reformed | 55 | 68 | 10,459 | Reformed Church in the United States | 1,384 | 752 | 154,742 |
| Evangelical Association | 1,322 | 1,340 | 99,607 | Roman Catholic* | 5,975 | 6,366 | ..... |
| Friends | 621 | 876 | 67,643 | Shaker | 17 | 68 | 2,400 |
| Jews | 269 | 202 | 13,083 | Unitarian Congregat'n'l | 342 | 304 | 17,960 |
| Lutheran | 5,556 | 3,102 | 684,573 | United Breth. in Christ | 2,207 | 2,200 | 155,437 |
| Mennonite, New | 31 | 44 | 2,990 | United Evangelical | 366 | 363 | 144,000 |
| Methodist Episcopal | 16,721 | 9,261 | 1,680,779 | Universalist | 719 | 713 | 26,238 |
| Methodist Episcopal (South) | ..... | 3,593 | 828,013 | Winebrennerians, (Church of God) | 569 | 498 | 20,224 |
| Methodist Episcopal, Colored | 1,038 | 648 | 74,195 | | | | |
| Methodist, Free | 287 | 601 | 12,120 | | | | |

* The Roman Catholics claim to have 6,370,858 adherents in the United States (Catholic Directory for 1882), but church membership is not reported.

## RELIGIOUS DIVISIONS OF THE WORLD.

[Estimate from Schem's Statistics of the World.]

| | | | |
|---|---|---|---|
| Christians, viz. | Roman Catholics | 201,000,000 | 388,000,000 |
| | Protestants | 106,000,000 | |
| | Eastern Churches | 81,000,000 | |
| Buddhists | 340,000,000 | Followers of Confucius | 80,000,000 |
| Mohammedans | 201,000,000 | Sinto Religion | 14,000,000 |
| Brahmanism | 175,000,000 | Judaism | 7,000,000 |

# WORLD'S CYCLOPEDIA.

## ABBREVIATIONS USED IN WRITING AND PRINTING.

## ABBREVIATIONS USED IN WRITING AND PRINTING.

A. A. S. (*Academiæ Americanæ Socius.*) Fellow of the American Academy.
A. B. (*Artium Baccalaureus.*) Bachelor of Arts.
A. B. S. American Bible Society. [fore Christ.
A. C. (*Ante Christum.*) Be-
Acct. Account.
A. D. (*Anno Domini.*) In the year of our Lord.
Adjt. Adjutant.
Adjt.-Gen. Adjutant-General.
Æt, Æ. (*Ætatis.*) Of age; aged.
A. & F. B. S. American and Foreign Bible Society.
A. H. M. S. American Home Missionary Society.
Al., Ala. Alabama.
A. M. (*Artium Magister.*)—Master of Arts.—(*Ante Meridiem.*) Before noon.—(*Anno Mundi.*) In the year of the world.
Am., Amer. American.
An. (*Anno.*) In the year.
Anon. Anonymous.
Ark. Arkansas.
A.-S. Anglo-Saxon.
A. S. S. U. American Sunday School Union.
A. T. S. American Tract Society; American Temperance Society.
Att., Atty. Attorney.
Atty.-Gen. Attorney-General.
A.U.C. (*Anno Urbis Conditæ.*) In the year from the building of the city [Rome].
[ish America.
B. A. Bachelor of Arts; Brit-
B. C. Before Christ.
B. C. L. Bachelor of Civil Law.
B. D. Bachelor of Divinity.
Bd. Bound.
Bds. Bound in boards.
Bk. Bank; Book.
B. L. (*Baccalaureus Legum.*) Bachelor of Laws.
B. M. (*Baccalaureus Medicinæ.*) Bachelor of Medicine.
Brig. Brigade; Brigadier.
Brit. Britain; British.

C. (*Centum.*) A hundred; Cent; Congress.
C., Cap. (*Caput*) Chapter.
Cal. California; Calends.
Capt. Captain.
Cath. Catholic. [Pleas.
C. C. P. Court of Common
C. E. Civil Engineer.
Cent., Ct. (*Centum*). A hundred.
C. H. Court-House.
C. J. Chief Justice.
Co. County; Company.
C. O. D. Collect on Delivery.
Col. Colonel; Colossians.
Con. (*Contra.*) Against, or in opposition.
Con. Cr., C. C. Contra, Credit.
Cong., C. Congress.
Conn., Ct. Connecticut.
Cr. Credit; Creditor.
Ct. Cent; Court.
Curr. Current, *or* this month.
Cwt. (*Centum* and *weight.*) Hundred-weight.
D., d. (*Denarius.*) Penny.
D. C. District of Columbia.
D. C. L. Doctor of Civil Law.
D. D. (*Divinitatis Doctor.*) Doctor of Divinity.
Del. Delaware; Delegate.
Del. (*Delineavit.*) He drew it.
Dep., Dept. Department.
Dep. Deputy.
Dept., Dpt. Deponent.
Dft., Deft. Defendant.
D. G. (*Dei Gratia.*) By the Grace of God.
Dict. Dictator; Dictionary.
Dist.-Atty. District-Attorney.
D. M. Doctor of Music.
Do. (*Ditto.*) The same.
Dols., $. Dollars.
D. P. Doctor of Philosophy.
Dr. Doctor: Debtor; Dram.
D. V. (*Deo Volente.*) God willing.
Dwt. (*Denarius* and *weight.*) Pennyweight.

E. East; Earl; Eagle.
Ecclus. Ecclesiasticus.
Ed. Edition; Editor.
E. G., e. g. (*Exempli Gratia.*) For example.
E. Lon. East Longitude.
E. N. E. East North-east.
Eng. England; English.
Ep. Epistle.
E. S. E. East South-east.
Esq., Esqr. Esquire.
Et al. (*Et alii.*) And others.
Et al. (*Et alibi.*) And elsewhere.
Etc., &c. (*Et cætera.*) And others; and so forth.

Fahr. Fahrenheit. [of Arts.
F. A. S. Fellow of the Society
F. H. S. Fellow of the Historical Society.
Fl., Flor., Fa. Florida.
Fo., Fol. Folio.
F. R. G. S. Fellow of the Royal Geographical Society.
F. R. S. Fellow of the Royal Society.

Ga. Georgia.
G. B. Great Britain.
Gen. General; Genesis.
Gov. Governor.

H., h., hr. Hour.
Hag. Haggai.
H. B. M. Her Britannic Majesty
Hhd. Hogshead.
H. M. His *or* Her Majesty.
H. M. S. His *or* Her Majesty's Ship *or* Service.
Hon. Honorable.
H. R. House of Representatives
H. R. H. His *or* Her Royal Highness.

Ia. Iowa. [place.
Ib., Ibid. (*Ibidem.*) In the same
Id. (*Idem.*) The same.
I. e., i. e. (*Id est.*) That is.
I.H.S. (*Jesus Hominum Salvator.*) Jesus the Saviour of Men
Ill. Illinois.
In. Inch; Inches.
Ind. Indiana.
Ind. Ter. Indian Territory.
Inst. Of the present month.
Int. Interest. [passage.
In trans. (*In transitu.*) On the
I. T. Indian Territory.
J. C. D. (*Juris Civilis Doctor.*) Doctor of Civil Law.
J. D. (*Jurum Doctor.*) Doctor of Laws.
J. P. Justice of the Peace.
Jr., Jun. Junior.

J. U. D. (*Juris Utriusque Doctor.*) Doctor of both Laws; *i. e.*, Canon and Civil Law.
Ky. Kentucky.

L., lb. (*Libra.*) Pound weight.
L., *l.*, *£*. Pound Sterling.
La. Louisiana.
Lat. Latitude; Latin.
L. I. Long Island.
Lib. Librarian. (*Liber.*) Book.
Lieut., Lt. Lieutenant.
Lieut.Col.Lieutenant-Colonel.
LL.B. (*Legum Baccalaureus.*) Bachelor of Laws. [of Laws.
LL.D. (*Legum Doctor.*) Doctor
Lon., Long. Longitude.
L. S. (*Locus Sigilli.*) Place of the Seal.
L. S. D., l. s. d. Pounds, shillings, pence.

M., Mon. Monday. [Academy.
M. A. Master of Arts: Military
Mass., Ms. Massachusetts.
M. B. (*Medicinæ Baccalaureus,*) Bachelor of Medicine.
M. B. (*Musicæ Baccalaureus.*) Bachelor of Music.
M. C. Member of Congress; Master Commandant.
M. D. (*Medicinæ Doctor.*) Doctor of Medicine.
Md. Maryland.
Me. Maine.
M. E. Methodist Episcopal.
Mem. (*Memento.*) Remember.
Mem. Memorandum.
Messrs., MM. (*Messieurs.*) Gentlemen; Sirs.
Meth. Methodist.
Mex. Mexico, *or* Mexican.
Mich. Michigan; Michaelmas.
Minn. Minnesota. [tentiary.
Min. Plen. Minister Plenipo-
Miss. Mississippi.
Mo. Missouri; Month.
Mons. Monsieur *or* Sir.
M. P. Member of Parliament;
MS. Manuscript.
MSS. Manuscripts.

N. A. North America.
N. B. New Brunswick; North Britain;—(*Nota bene.*) Mark well; take notice.
N. C. North Carolina.
N.E. New England; North-east
Neb. Nebraska.
N. F. Newfoundland.
N. H. New Hampshire.
N. J. New Jersey.
N. Lat., N. L. North Latitude.
N. M. New Mexico.
N. N. E. North-North-east.
N. N. W. North-North-west.
Non pros. (*Non prosequitur.*) He does not prosecute.
N. P. Notary Public; New Providence.
N. S. New Style; Nova Scotia.
N. T. New Testament.
N. W. North-west.
N. Y. New York.

O. Ohio; Oxygen.
Ob. ob., (*Obit.*) Died.
Ont. Ontario.
Or. Oregon.
O. S. Old Style (before 1752).
O. T. Old Testament.
Oz., oz. Ounce, *or* ounces.

P. E. Protestant Episcopal.
P. E. I. Prince Edward Island.
Per an. (*Per annum.*) By the Year.
Per cent., per ct. (*Per centum.*) By the hundred.
Ph. D., P. D. (*Philosophiæ Doctor*) Doctor of Philosophy
Pinx., Pxt. (*Pinxit.*) He *or* she painted it.
P. M. (*Post Meridiem.*) Afternoon; Postmaster.
P. M. G. Postmaster-General.
P. P. C. (*Pour prendre congé.*) To take leave.
P. Q. Province of Quebec.
Prof. Professor. [the time.
Pro tem. (*Pro tempore.*) For
Prox. (*Proximo.*) Next month.
P. S. Privy Seal. (*Post scriptum.*) Postscript.
Ps. Psalm, *or* Psalms.

Q. S., q. s. (*Quantum sufficit.*) A sufficient quantity.
Qu., Qy., q. (*Quære.*) Query.
Q. V., q. v. (*Quod vide.*) Which see;—(*Quantum vis.*) As much as you please.

R. (*Rex.*) King;—(*Regina.*) Queen.
R. A. Royal Academy; Royal Academician; Royal Artillery; Rear Admiral.
R. E. Royal Engineers.
Rec. Sec. Recording Secretary
Ref. Ch. Reformed Church.
Reg. Prof. Regius Professor.
Rep., Repub. Republic.
Rev. Reverend; Revelation.
R. I. Rhode Island.
R. N. Royal Navy.
Rom. Romans.
Rom. Cath. Roman Catholic.
R. R. Railroad.
Rt. Hon. Right Honorable.
Rt. Rev. Right Reverend.

S. South; Shilling; Sunday.
S., St. Saint.
S. A. South America.
S. C. South Carolina.
Sc., Sculp. (*Sculpsit.*) He, *or* she, engraved it; Sculpture.
S. E. South-east.
Sec., Sect. Secretary; Section.
Serg., Serjt. Sergeant.
S. J. C. Supreme Judicial Court.
Sol.-Gen. Solicitor-General.
S. P. A. S. (*Societatis Philosophicæ Americanæ Socius.*) Member of the American Philosophical Society.
Sq., Sqr. Square. [namely.
SS., ss. (*Scilicet.*) To wit;
S. S. E. South-South-east.
S. S. W. South-South-west.
S. T. D. (*Sacræ Theologiæ Doctor.*) Doctor of Divinity.
Ster., Stg. Sterling.
S. T. P. (*Sacræ Theologiæ Professor.*) Professor of Theology
Supt. Superintendent.
S. W. South-west.

Tenn. Tennessee.
Tex. Texas.

Ult. (*Ultimo.*) Last month.
U. S. United States.
U. S. A. United States Army; United States of America.
U. S. M. United States Mail; United States Marine.
U. S. N. United States Navy.
U. S. S. United States Ship.
U. T. Utah Territory.

V., Vl., Vid. (*Vide.*) See.
V., vs. (*Versus.*) Against.
Va. Virginia.
V.-C. Vice-Chancellor.
Viz. (*Videlicet.*) To wit; Namely
V. R. (*Victoria Regina.*) Queen Victoria.
Vt. Vermont.

W. Welsh; West.
W. I. West India; West Indies.
Wis. Wisconsin.
W. Lon. West Longitude.
W. Va. West Virginia.

Xmas., Xm. Christmas.
Xn., Xtian. Christian.

Y., *or* Yr. Year.
Yd. Yard;—Yds. Yards.

# SUPPLEMENT
OF
# ADDITIONAL WORDS AND DEFINITIONS,

COMPRISING ALL THE WORDS OF ANY IMPORTANCE NOT CONTAINED IN THE BODY OF THE BOOK, A LARGE PROPORTION OF WHICH ARE

*NOT TO BE FOUND IN ANY OTHER DICTIONARY.*



**A1**(ā'wun), *a.* registry-mark denoting a ship of the first or highest class; hence, colloq., the very best; first-rate.

**Abalone** (ab-a-lō'ne), *n.* a shell found on the coast of California, worked into ornaments.

**Abandon** (a-ban'dn), *n.* unreserved devotion to a particular object, taste, emotion, &c.

**Abandonment** (a-ban'dn-ment) *n.* the yielding to a passion, taste, object, or emotion.

**Abanga** (a-ban'gah), *n.* the fruit of a West Indian palm.

**Abas** (ā-bah'), a French exclamation, equivalent to English "Down with."

**Abeam** (a-bēm'), *ad.* in a line at right angles to a vessel's keel.

**Abey** (a-bā'), *n.* kind of mahogany found in St. Domingo.

**Abiogenesis** (a-bī-o-jen'e-sis), *n.* living beings developed from dead matter; spontaneous generation of life.

**Abiogenist** (a-bi-oj'e-nist), *n.* a believer in abiogenesis.

**Abiogeny** (a-bi-oj'e-ne), *n.* the same as *Abiogenesis*.

**Able-bodied** (ā'bl-bod'id), *a.* noting a seaman of sound body, skilled in seamanship.

**Abloom** (a-bloom'), *ad.* or *a.* in full bloom; blooming.

**Aborted** (a-bor'ted), *a.* noting an organ slightly developed.

**Aborticide** (a-bor'te-sid), *n.* destroying fœtus in the womb.

**Abortient** (a-bor'shent), *a.* sterile; barren; unfruitful.

**Absinthiate** (ab-sin'the-āt), *v.* to impregnate with absinthe.

**Absolutist** (ab'so-lū-tist), *a.* characterized by absolutism; absolute; despotic.

**Absolvable** (ab-solv'a-bl), *a.* capable of being absolved.

**Absorptivity** (ab-sorp-tiv'e-te) *n.* capacity for absorption.

**Abstainer** (ab-stān'er), *n.* one who abstains from liquors.

**Accessive** (ak-ses'siv), *a.* accessory; additional.

**Acclimatation** (ak-klī-ma-tā'-shun), *n.* acclimation; acclimatization.

**Accrescent** (ak-kres'sent), *a.* growing larger; increasing.

**Acetated** (as'e-tāt-ed), *a.* combined with acetic acid.

**Acetify** (a-set'e-fy), *v.* to be changed into acid or vinegar.

**Acetin** (as'e-tin), *n.* an ether derived from glycerine.

**Acetone** (as'e-tōn), *n.* a colorless, limpid, very inflammable liquid, of peculiar odor.

**Achromatopsy** (a-kro-ma-top'-se), *n.* incapacity to distinguish colors; color-blindness.

**Acidifie** (as-id-i'fi), *a.* rendering acid; causing acidity.

**Acidimetrie** (a-sid-e-met'rik), *a.* relating to the measurement of the strength of acids

**Acidulated** (a-sid'ū-lāt-ed), *a.* slightly imbued with acid.

**Acidulent** (a-sid'ū-lent), *a.* somewhat sour; acidulous.

**Acierage** (ās'ēr-ij), *n.* coating metal plates with steel.

**Acierate** (ās'ēr-āt), *v.* to convert into steel. [barnacle.

**Acorn-shell** (ā'korn-shel), *n.* a

**Acosmism** (a-koz'mizm), *n.* denying existence of the world.

**Acosmist** (a-koz'mist), *n.* denier of the existence of the world.

**Acoustically** (a-kow'stik-al-le), *ad.* as regards acoustics.

**Acoustician** (a-kow-stish'an). *n.* one versed in acoustics.

**Acoustics** (a-kow'stiks), *n.* the science of sound, including vibrations of elastic bodies.

**Acrobatic** (ak-ro-bat'ik), *a* pertaining to an acrobat.

**Acrotism** (ak'ro-tizm), *n.* absence or defect of pulse.

**Acting** (akt'ing), *a.* discharging the duties of another.

**Adam's-apple** (ad'amz-ap'pl), *n.* a variety of banana.

**Adiathermic** (a-dī-a-ther'mik), *a.* not pervious to heat.

**Adipsous** (a-dip'sus), *a.* tending to quench thirst, as fruits.

**Adjuratory** (ad-jūr'a-to-re), *a.* pertaining to adjuration.

**Admissive** (ad-mis'siv), *a.* of the nature of admission.

**Admittable** (ad-mit'ta-bl), *a.* that may be admitted.

**Admittedly** (ad-mit'ted-le), *ad.* by admission; confessedly.

**Adobe** (a-dō'bā), *n.* a brick baked in the sun.

**Adonis** (a-dō'nis), *n.* a foppish young man; a dandy; a fop.

**Advance** (ad-vanse'), *n.* a sum of money paid in advance.

**Advanced** (ad-vanst'), *a.* imbued with new ideas.

**Æolus** (ē'o-lus), *n.* the god of the winds; a portable engine for changing the air in rooms.

**Æon** (ē'on), *n.* an immeasurable period of time; an eon.

**Æpiornis** (ep-e-or'nis), *n.* a gigantic bird, now extinct, remains of which have been found in Madagascar.

**Aeriferous** (ā-er-if'er-us), *a.* conveying air; air-bearing.

**Aerognosy** (ā-er-og'no-se), *n.* the science of the properties and phenomena of the air.

**Aeroklinoscope** (ā-er-o-klin'o-skōp), *n.* a device to show the way the wind blows, and to exhibit variations in barometric pressure.

**Aerolithology** (ā-er-o-le-thol'-o-je), *n.* science of aerolites.

**Aerophobia** (ā-er-o-fō'be-ah), *n.* a disorder accompanying hydrophobia, hysteria, &c.

**Æsthesiography** (es-the-se-og'-ra-fe), *n.* description of sensorial apparatus of the body.

**Æsthesodic** (es-the-sod'ik), *a.* conveying sensory impulses.

**Æsthete** (es-thēt'), *n.* one who affects a peculiar propriety of manner, taste, dress, etc.

**Æsthetician** (es-the-tish'an), *n.* a person of æsthetic tastes.

**Æstheticism** (es-thet'e-sizm), *n.* æsthetic principles, taste, &c.

**Æstival** (es'te-val), *a.* relating to or occurring in summer.

**Æstivation** (es-te-vā'shun), *n.* dormant state of some animals during the hot season.

**Afferent** (af'fer-ent), *a.* noting nerves that convey sensations to the nervous centers.

**Affiliable** (af-fil'e-a-bil), *a.* capable of being affiliated.

**Aflow** (a-flō'), *ad.* or *a.* in a flowing state. [of foam.

**Afoam** (a-fōm'), *ad.* in a state

**Africander** (af-re-kan'dr), *n.* a native of South Africa, of European descent.

**Africanization** (af-re-kan-ī-zā'-shun), *n.* negro ascendency.

**Africanize** (af're-kan-iz), *v.* to place under negro domination

**Afterdamp** (af'tr-damp), *n.* gas emitted in coal-mines, very fatal to life; choke-damp.

**After-years** (af'tr-yērz), *n. pl.* after-times; later times.

**Agamic** (a-gam'ik), *a.* noting any mode of reproduction without union of the sexes.

**Agamogenesis** (ag-a-mo-jen'e-sis), *n.* reproduction without the sexes; parthenogenesis.

**Agamogenetic** (ag-a-mo-je-net'ik), *a.* pertaining to agamogenesis. [bling agate.

**Agatine** (ag'a-tin), *a.* resem-

**Agave** (a-gā've), *n.* American aloe, from the juice of which the liquor *pulque* is made.

**Age** (āj), *v.* to grow old; to show the effects of age.

**Agedness** (āj'ed-nes), *n.* state of being aged or old.

**Ageless** (āj'les), *a.* having no age or limits of duration.

**Agenesic** (aj-e-nes'ik), *a.* pertaining to agenesis.

**Agenesis** (a-jen'e-sis) *n.* incapability of producing offspring.

**Aging** (āj'ing), *n.* the process of growing old or older.

**Agnostic** (ag-nos'tik), *n.* one who professes to know nothing in regard to the being of a God, &c.;—*a.* professing inability to judge of God, &c.

**Agnosticism** (ag-nos'te-sizm), *n.* inability to affirm or deny in regard to God, &c.

**Agriologist** (ag-re-ol'o-jist), *n.* a student of human customs.

**Agriology** (ag-re-ol'o-je), *n.* the comparative study of mankind in the natural state.

**Ahead** (a-hed'), *ad.* farther forward; in advance; onward.

**Ai** (āh'e), *n.* an ape-like animal of South America.

**Air-bath** (air'bath), *n.* a method of drying bodies in air of any required temperature.

**Air-brake** (air'brāk), *n.* a railroad brake operated by means of compressed air.

**Air-cushion** (air-kush'un), *n.* a cushion inflated with air.

**Air-drain** (air'drān), *n.* cavity between the external walls of a building, for ventilation.

**Air-flue** (air'flū), *n.* a flue for conveying air to the various parts of a building.

**Air-machine** (air'ma-shēn'), *n.* an apparatus to regulate and purify the air in mines, &c.

**Air-trunk** (air'trunk), *n.* a tube passing from the ceiling of a room to the open air.

**Air-valve** (air'valv), *n.* a valve in the boiler of a steam-engine, to prevent a vacuum when the steam is condensing

**Alarm-gauge** (a-lärm'gāj), *n.* a device in a steam-engine to show when the steam is too strong or the water too low.

**Albata** (al-bā'ta), *n.* a compound of tin, zinc, nickel, and copper; German silver.

**Albescence** (al-bes'sense), *n.* the process of growing white.

**Albicant** (al'be-kant), *a.* growing white; albescent.

**Albinotic** (al-be-not'ik), *a.* affected with albinism.

**Albion** (al'be-un), *n.* the ancient name of Great Britain.

**Albronze** (al'bronz), *n.* mixture of copper and aluminum.

**Albuminine** (al-bū'me-nin), *n.* the substance of the cells inclosing the white of eggs.

**Albuminoids** (al-bū'me-noydz) *n. pl.* a class of substances found in all living organisms.

**Alcoholism** (al'ko-hol-izm), *n.* disease caused by the excessive use of alcoholic liquors.

**Aldermanic** (ăl-dr-man'ik), *a.* appropriate to an alderman.

**Aleithoscope** (a-leth'o-skōp), *n.* optical instrument through which pictures are viewed.

**Alewife** (ăl'wif), *n.* a fish of the herring kind; a gaspereau.

**Alfalfa** (al-fal'fa), *n.* a plant of the clover family.

**Algoid** (al'goyd), *a.* resembling or of the nature of seaweed.

**Algonquin** (al-gon'kin), *a.* noting a tribe of Indians.

**Algonquins** (al-gon'kinz), *n. pl.* family of American Indians.

**Algous** (al'gus), *a.* relating to, or of the nature of, seaweed.

**Alienage** (āl'yen-āj), } *n.* the
**Alienism** (āl'yen-izm), } statc of being an alien.

**Alienist** (āl'yen-ist), *n.* a physician who makes a specialty of insanity;—*a.* relating to insanity, or to the study of it.

**Alligator-apple** (al'le-gā-tr-ap'pl), *n.* a West Indian fruit of narcotic properties.

**Alligator-pear** (al'le-gā-tr-pare), *n.* a West Indian fruit.

**Alkalify** (al-kal'e-fī), *v.* to become changed into an alkali.

**Allocation** (al-lo-kā'shun), *n.* apportionment; assignment.

**Allottee** (al-lot-tē'), *n.* one to whom anything is allotted.

**Alpen** (alp'en), *a.* belonging to the Alps; alpine.

**Alpenstock** (alp'en-stok), *n.* a strong iron-pointed staff, used in climbing the Alps, &c

**Alphabetize** (al'fa-bet-iz), *v.* to arrange alphabetically.

**Althorn** (alt'horn), *n.* instrument like the French horn.

**Altruism** (al'tru-izm), *n.* regard for the rights, interests, feelings, and well-being of others

**Altruist** (al'tru-ist), *n.* a promoter of the welfare of others.

**Altruistic** (al-tru-is'tik), *a.* pertaining to altruism.

**Amarin** (am'a-rin), *n.* the bitter principle of vegetables.

**Amateurish** (am-a-tewr'ish), *a.* like an amateur. [love.

**Amative** (am'a-tiv), *a.* given to

**Ameer** (a-mēēr'), *n.* the title of a Mohammedan prince.

**Ameliorative** (a-mēl'yo-rā-tiv) *a.* producing amelioration.

**Amenomania** (a-mē-no-mā'ne-ah), *n.* a gay form of insanity.

**Menorrhœa** (a-men-o-ré'ah), *n.* absence or stoppage of the menstrual discharge.

**Amnion** (am'ne-un), *n.* inner membrane which surrounds the fetus in the womb.

**Amphi** (am'fe), prefix in words of Greek origin, signifying *around, about,* &c.

**Amphigean** (am-fē'je-an), *a.* relating to or extending over all the zones of the globe.

**Anæmia** (a-nē'me-ah), *n.* a diminution of the quantity of blood in the human system.

**Anæmic** (a-nem'ik), *a.* pertaining to anæmia; bloodless.

**Anæmotrophy** (an-e-mot'ro-fe) *n.* a deficiency of blood.

**Anæsthesia** (an-es-thē'zhe-ah) *n.* loss of sensation.

**Anæsthetics** (an'es-thet'iks), *n. pl.* agents that produce insensibility to pain, as ether.

**Anæsthetize** (an-es'the-tīz), *v.* to put under the influence of an anæsthetic.

**Anamniota** (an-am-ne-ō'tah), *n. pl.* the group of vertebrates in which the fetus is destitute of an amnion.

**Anamorphism** (an-a-mor'fizm) *n.* progression from a lower type to a higher one.

**Anchor-ice** (ank'ur-ice), *n.* ice formed at the bottom of a river

**Android** (an'droyd), *a.* resembling a man or male.

**Androphagous** (an-drof'a-gus), *a.* addicted to cannibalism.

**Anelectric** (an-e-lek'trik), *a.* not electric.

**Anemoscope** (a-nem'o-skōp), *n.* an instrument to show the direction of the wind.

**Angle-bar** (ang'gl-bar), } *n.*
**Angle-iron** (ang'gl-ī'urn), } a bar of iron rolled to the shape of the letter L, designed to form the joints of plate-iron for girders, boiler-plates, &c.

**Anglican** (ang'gle-kan), *a.* noting the high church party of the church of England.

**Anglicanism** (ang'gle-kan-izm) *n.* the principles of the high church party, of England.

**Anglo** (ang'glo), a prefix signifying English.

**Anglo-American** (ang'glo-a-mer'e-kan), *n.* an American born of English ancestors.

**Anglomania** (ang'glo-mā'ne-ah *n.* excessive attachment to England or her institutions.

**Anglophobia** (ang'glo-fō'be-ah *n.* insane hatred of England.

**Angola** (an-gō'lah), *n.* a light cloth made from the wool of the Angora goat.

**Angola-seeds** (an-gō'lah-sēdz), *n. pl.* small red seeds of wild liquorice, used for beads, &c.

**Animism** (an'im-izm), *n.* the doctrine of spiritual beings.

**Annihilationist** (an-ni-hi-lā'shun-ist), *n.* a believer in the annihilation of man at death

**Annihilatory** (an-ni'hi-lā-to-re), *a.* tending to annihilate or destroy; destructive.

**Anonyme** (an'o-nim), *n.* an assumed or false name.

**Anonymity** (an-o-nim'e-te), *n.* the state of being anonymous

**Antagonize** (an-tag'o-nīz), *v.* to act in opposition; to combat.

**Antaphrodisiac** (ant-af-ro-dizh'yak), *a.* having quality of quelling sexual desire.

**Antaphroditic** ant-af-ro-dit'ik *n.* same as *Antaphrodisiac.*

**Antenatal** (an-te-nā'tal), *a.* before or preceding birth.

**Antenave** (an'te-nāv), *n.* porch at the entrance of a church.

**Antennal** (an-ten'nal), *a.* of or pertaining to the antennæ.

**Antennules** (an-ten'nūlz), *n. pl.* the smaller pair of antennæ.

**Anthography** (an-thog'ra-fe), *n.* a description of flowers.

**Anthropogenetic** (an-thro-po-je-net'ik), *a.* pertaining to the origin of mankind.

**Anthropogeny** (an-thro-poj'e-ne), *n.* the origin and development of mankind.

**Anthropoid** (an'thro-poyd), *a.* resembling a man; man-like.

**Anthropomorphic** (an-thro-po-mor'fik), *a.* characterized by human qualities.

**Anthropomorphism** (an-thro-po-mor'fizm), *n.* ascription of human qualities to God.

**Anthropopathical** (an-thro-po-path'e-kal), *a.* subject to human feelings and passions.

**Anthropophagist** (an-thro-pof'a-jist), *n.* a cannibal.

**Anthropophuism** (an-thro-po-fū'izm), *n.* the nature of man

**Antilithic** (an-te-lith'ik), *a.* tending to prevent or destroy stones in the bladder.

**Antiparalytic** (an-te-par-a-lit'ik), *n.* medicine or remedy against paralysis.

**Antipathetic** (an-tip-a-thet'ik) resulting from antipathy.

**Antiperistaltic** (an-te-per-e-stal'tik), *a.* noting an unnatural or reversed action of the alimentary canal.

**Antipharmic** (an-te-fär'mik) *a.* counteracting poison.

**Antiperiodic** (an-te-pē-re-od'ik), *n.* a medicine or remedy against periodic ailments.

**Antipodal** (an-tip'o-dal), *a.* on the opposite side of the earth.

**Antipodism** (an-tip'o-dizm), *n* condition of being antipodal.

**Antiquarianize** (an-te-kwā're-an-īz), *v.* to pursue antiquarian researches.

**Antizymic** (an-te-zim'ik), *a.* preventive of fermentation.

**Aphasia** (a-fā'zhe-ah), *n.* loss of the memory of words.

**Aphasic** (a-fā'zik), *a.* relating to or affected by aphasia.

**Aplomb** (a-plōm'), *n.* downrightness of manner; self-possession; coolness.

**Apo** (ap'o), a prefix in words of Greek origin, signifying *from, away from, off.*

**Apoganic** (ap-o-gan'ik), *a.* characterized by apogamy.

**Apogamy** (a-pog'a-me), *n.* absence or loss of reproductive power, as in certain plants.

**Apotheosize** (ap-o-thē'o-sīz), *v.* to elevate to the dignity of a divinity; to deify.

**Apparitional** (ap-pa-rish'un-al), *a.* pertaining to or resembling an apparition.

**Appellability** (ap-pel-la-bil'e-te), *n.* capability of appeal.

**Appellable** (ap-pel'la-bl), *a.* capable of being appealed.

**Appellate** (ap-pel'lāt), *a.* relating to appeals.

**Appendicular** (ap-pen-dik'ū-lar), *a.* noting those parts of the skeleton, as the limbs, attached to the axial column.

**Appetizer** (ap-pe-tiz'er), *n.* that which excites an appetite.

**Apple-bee** (ap'pl-bē), } *n.* a
**Apple-cut** (ap'pl-kut), } collection of young people to cut up apples for drying.

**Apple-borer** (ap'pl-bōr'er), *n.* a worm infesting apple-trees.

**Apple-brandy** (ap'pl-bran'de), *n.* applejack; cider-brandy.

**Apple-butter** (ap'pl-but'tr), *n.* sauce made of apples stewed down in cider.

**Applejack** (ap'pl-jak), *n.* a liquor distilled from fermented apple-juice; apple-brandy.

**Aquatics** (a-kwat'iks), *n.* collective name for aquatic sports.

**Aquatint** (á'kwa-tint), } *n.*
**Aquatinta** (á-kwa-tin'ta), } engraving by aquafortis.

**Arboreal** (ar-bō're-al), *a.* frequenting or inhabiting trees.
**Arborized** (ar'bor-izd), *a.* figured like a tree; arborescent.
**Arbor vitæ** (ar'bor vi'tē), *n.* ramifications in the human brain, resembling a tree.
**Archaist** (ar'ka-ist), *n.* an archæologist; an antiquarian.
**Archbrick** (arch'brik), *n.* a wedge-shaped brick used in the construction of arches.
**Archebiosis** (ar-ke-be-ō'sis), *n.* the origin of living from non-living matter; abiogenesis.
**Architectonics** (ar-ke-tek-ton'iks), *n.* arranging of knowledge into a system; capacity for organizing knowledge.
**Architectonic** (ar-ke-tek-ton'ik), *a.* having scientific, architectural, or constructive skill.
**Arctogeal** (ark-to-jē'al), *a.* noting colder parts of the earth.
**Ardassine** (ar'das-sin), *n.* very fine variety of Persian silk.
**Are** (ār), *n.* a measure of superficies equal to 100 square meters, or 119.6 square yards
**Areal** (ā're-al), *a.* pertaining to area, or superficial extent.
**Arenated** (ar'e-nāt-ed), *a.* ground into sand.
**Arenicole** (a-ren'e-kōl), *n.* animal or plant living in sand.
**Aretaics** (ar-e-tā'iks), *n.* part of ethics relating to virtue.
**Argentate** (ar'jen-tāt), *n.* salt of argentic acid and a base.
**Argonaut** (ar'go-not), *n.* one of the pioneer settlers of California, who went in 1849.
**Arius** (ā're-us), *n.* a species of catfish found on the coast of South America.
**Arming-press** (arm'ing-pres), *n.* a bookbinder's tool for stamping titles on books.
**Armor-plated** (ar'mor-plāt'ed) *a.* covered with iron plates for defense, as a ship of war.
**Armure** (ar'mūr), *n.* a twilled woolen fabric, surface-ribbed.
**Army-worm** (ar'me-wurm), *n.* a voracious caterpillar, appearing in vast numbers.
**Arrow-wood** (ar'ro-wood), *n.* a shrub of which Western Indians make their arrows.
**Arta** (ar'ta), *n.* a remarkable species of catfish found in Ceylon waters, having the power of moving on land by means of its side fins.
**Arteritis** (ar-te-rī'tis), *n.* inflammation of an artery.
**Artotype** (ar'to-tip), *n.* a picture produced by artotypy.
**Artotypy** (ar-tot'e-pe), *n.* process of taking pictures on a film of sensitized gelatine.
**Ash-cake** (ash'kāk), *n.* a corn-cake baked in the ashes.
**Asininity** (as-e-nin'e-te), *n.* obstinate stupidity; assishness.
**Asphyxiated** (as-fiks'e-āt-ed), *a.* suffering from or in a state of asphyxia.
**Asphyxiation** (as-fiks-e-ā'shun) *n.* state of asphyxia.
**Aspiratory** (as-pīr'a-to-re), *a.* pertaining to breathing.
**Assegai** (as-se-gī'), *n.* a kind of javelin used by the Caffres, Zulus, &c., of South Africa.
**Assish** (ass'ish), *a.* resembling an ass; stupid; asinine.
**Assishness** (ass'ish-nes), *n.* obstinate stupidity. [tarfish.
**Asterolimn** (as-ter-id'yan), *n.* a
**Asthenia** (as-thēn'e-ah), *n.* bodily weakness; debility.
**Astrogeny** (as-troj'e-ne), *n.* the creation of the heavens.
**Astucity** (as-tū'se-te), *n.* astuteness; craftiness.
**Asymmetric** (as-im-met'rik), *a.* not symmetrical.
**Asymmetrical** (as-im-met'rik-al), *a.* unsymmetrical.
**Atajo** (a-tā'ho), *n.* [Sp.] a drove of pack-mules.
**Athermancy** (a-ther'man-se), *n.* impermeability to heat.
**Athlete** (ath'lēt), *n.* one devoted to athletic exercises.
**Athletics** (ath-let'iks), *n.* athletic exercises and sports.
**Atmologic** (at-mo-loj'ik), } **Atmological** (at-mo-loj'ik-al) } *a.* pertaining to atmology.
**Atmology** (at-mol'o-je), *n.* department of physical science which treats of aqueous vapor
**Atmolyzation** (at-mol-e-zā'shun), *n.* separation of gases.
**Atmolyze** (at'mo-liz), *v.* to separate gases and vapors.
**Atmolyzer** (at'mo-liz-er), *n.* an instrument for separating gases from one another.
**Atmolysis** (at-mol'e-sis), *n.* separation of gases of different densities from one another.
**Atom** (at'om), *n.* the smallest particle of matter.
**Atomicity** (at-o-mis'e-te), *n.* condition in regard to atoms.
**Atomistic** (at-o-mis'tik), *a.* pertaining to atoms.
**Atomization** (at-om-e-zā'shun) *n.* act of reducing to atoms.
**Atomize** (at'om-iz), *v.* to reduce to atoms.
**Atrabiliar** (at-ra-bil'e-ar), *a.* atrabilious; atrabiliary.
**Attal** (at'tl), *n.* waste matter from mines; refuse; rubbish.
**Attitudinize** (at-te-tū'de-nīz) *v.* to assume affected attitudes.
**Audiphone** (aw'de-fōn), *n.* an instrument to enable the deaf to hear, by conveying the sensation of sound to the auditory nerve through the medium of the teeth.
**Audition** (aw-dish'un), *n.* the act or sense of hearing.
**Auditorium** (aw-de-tō're-um), *n.* the part of a theater or public hall in which the audience is placed. [the ear.
**Aural** (aw'ral), *a.* pertaining to
**Auriscope** (aw're-skōp), *n.* instrument for examining the interior parts of the ear.
**Auriscopy** (aw-ris'ko-pe), *n.* examination of the ear by means of the auriscope.
**Aurite** (aw'rīt), *n.* salt consisting of aurous acid and a base.
**Auroral** (aw-rō'ral), *a.* relating to dawn, or to the aurora.
**Autogenetic** (aw-to-je-net'ik), *a.* self-generated or produced.
**Autogenous** (aw-toj'e-nus), *a.* self-generated; autogenetic.
**Automorphic** (aw-to-mor'fik), *a.* patterned after one's self.
**Autonomy** (aw-ton'o-me), *n.* self-government; political independence.
**Autophagi** (aw-tof'a-jī), *n. pl.* birds which, soon as hatched, obtain food for themselves.
**Autophagous** (aw-tof'a-gus), *a.* feeding one's self.
**Autotype** (aw'to-tip), *n.* picture taken by means of autotypy.
**Autotypy** (aw-tot'e-pe), *n.* a photographic process of fine-art printing, or phototyping.
**Avian** (av'e-an), *a.* relating to, or of the nature of, birds.
**Avicular** (a-vik'ū-lar), *a.* pertaining to birds.
**Awesome** (aw'sum), *a.* full of awe; awful; appalling.
**Awn** (awn), *n.* the beard of such plants as barley.
**Azuline** (azh'ū-lin), *n.* fine blue color, produced from aniline.

## B.

**Baba (bä'ba)**, *n.* **a kind of cake** filled with plums.

**Babbitt metal** (bab'it met'l), *n.* alloy of copper, tin, and zinc.

**Baby-farm** (bā'be-farm), *n.* a house where board and attendance for babes are offered

**Baby-farming** (bā'be-farm'ing) *n.* keeping a baby-farm.

**Bachelorhood** (bach'e-lor-hood) *n.* state of being a bachelor.

**Backbone** (bak-bōn'), *n.* moral stamina; firmness of purpose

**Backing** (bak'ing), *n.* the act of supporting and encouraging another in a difficulty, &c.

**Back-pressure** (bak-presh'ur), *n.* resistance to the piston of a steam-engine by waste steam or by the atmosphere.

**Back-settler** (bak-set'lr), *n.* a settler in the remote and wild parts of a country.

**Back-stream** (bak'strēm), *n.* a side current in a river, flowing up-stream.

**Backwoods** (bak'woodz), *n. pl.* partly cleared lands of a newly settled country.

**Baggage-master** (bag'gaj-mas'tr), *n.* man on a railroad who takes charge of baggage.

**Baggy** (bag'ge), *a.* bulged out like a bag. [mercial traveler.

**Bagman** (bag'man), *n.* a com-

**Bah** (bah), *interj.* an exclamation of contempt or disgust.

**Balance-sheet** (bal'anse-shēt), *n.* a sheet having Dr. and Cr. account, striking a balance.

**Balanism** (bal'a-nizm), *n.* the application of a pessary.

**Balanitis** (bal-a-nī'tis), *n.* inflammation of the glans penis

**Baleen** (ba-lēn'), *n.* plates of the palate of whalebone whales.

**Baling-press** (bāl'ing-pres), *n.* a press used for compressing goods into bales.

**Balk** (bawk), *v.* to stop abruptly or turn aside, as a horse.

**Balky** (bawk'e), *a.* apt to balk.

**Balloon-fish** (bal-loon'fish), *n.* a fish which inflates itself with air; the globe-fish.

**Ballooning** (bal-loon'ing), *n.* running up stock beyond its value by fictitious sales, &c.

**Banderillero** (ban-der-ēl-yā'rō), *n.* in a Spanish bullfight, one who sticks a dart with a small flag into a bull's neck.

**Bandicoot** (ban'de-koot), *n.* a species of rat found in India and Australia.

**Bandmaster** (band'mas-tr), *n.* conductor of a musical band.

**Bandoline** (ban'do-lin), *n.* a preparation for the hair.

**Bang-up** (bang'up), *a.* of superior quality; first-rate.

**Banjo** (ban'jo) *n.* musical instrument resembling the guitar.

**Bank** (bank), *v.* to deposit, as money, in a bank; to cover with small coal or ashes, as a fire in a furnace.

**Bantingism** (bant'ing-izm), *n.* a dietary system designed to reduce corpulence.

**Barbadoes-cherry** (bar-bā'duz-cher-re), *n.* West Indian tree, yielding pleasant, tart fruit.

**Barbadoes-tar** (bar-bā'dūz-tar) *n.* a kind of bituminous oil used in medicine and surgery

**Barbotine** (bär'bo-tin), *n.* mode of ornamenting pottery-ware

**Barege** (ba-rāzh') *n.* gauze-like material for dresses, veils, &c

**Barkentine** (bärk'en-tin), *n.* a bark rigged as a schooner.

**Barograph** (bär'o-graf), *n.* an instrument for recording changes in the air.

**Barrel-vault** (bar'rl-volt), *n.* a simple semicircular vault.

**Barrette** (bar-ret'), *n.* the square red cap of a cardinal.

**Barwood** (bar'wood), *n.* a red wood used as a dyewood.

**Bashi-bazouk** (bash'e-ba-zook') *n.* a Turkish irregular soldier who acts as a skirmisher, &c.

**Basso** (bas'so), *n.* the bass or base part; a singer of base.

**Basswood** (bas'wood), *n.* American linden; whitewood.

**Bate** (bāt), *n.* an alkaline lixivium made of the dung of animals, used in tanning.

**Bathbrick** (bath'brik), *n.* a block of compressed sand, taken from the bed of the river near Bath, England.

**Bathchair** (bath'chār), *n.* a hand-chair in which an invalid is wheeled about.

**Bath-metal** (bath'met'l), *n.* an alloy of copper and zinc.

**Bathometer** (bath-om'e-tr), *n.* an instrument used for determining depths in the sea.

**Bathybius** (ba-thib'e-us), *n.* a plastic, gelatinous, proteinaceous, half-living matter, at the bottom of the sea.

**Bathymetric** (bath-e-met'rik), *a.* pertaining to bathymetry.

**Bathymetry** (ba-thim'e-tre), *n.* the art of deep-sea sounding.

**Batswing** (bats'wing), *n.* a form of gasburner giving a jet in shape of a bat's wing.

**Batten** (bat'tn), *n.* a skylight-shutter; a flap.

**Battens** (bat'tnz), *n. pl.* boards used for flooring, &c.

**Bawbee** (baw'bē) *n.* old Scottish coin of the value of one cent.

**Bayberry** (bā'ber-re) *n.* a shrub having fragrant leaves.

**Bayberry-tallow** (bā'ber-re-tal'lō), *n.* a green wax constituting the outer coating of the bayberry; myrtle-wax.

**Bay-ice** (bā'ice), *n.* ice of recent formation, in bays, &c.

**Bay-leaf** (bā'lēf), *n.* leaf of the bay-tree. [a lake.

**Bayou** (bī'oo), *n.* the outlet of

**Baywood** (bā'wood), *n.* name for Honduras mahogany.

**Beachcomber** (bēt'sh'kōm-er) *n.* a long wave rolling on the beach; a vagabond sailor.

**Beach-wagon** (bēt'sh'wag'on), *n.* a light open wagon, with two or more seats.

**Bead** (bēd), *v.* to form bead-like bubbles, as liquors.

**Beading** (bēd'ing), *n.* a moulding formed to represent beads

**Beading** (bēd'ing), *n.* a preparation for causing liquor to form beads in a glass.

**Beady** (bēd'e), *a.* bead-shaped; small, clear, and globular.

**Beak** (bēk), *n.* a policeman.

**Bear** (bār), *v.* to depress or lower the price of stocks or shares, by false reports, &c.

**Bearing-rein** (bār'ing-rān), *n.* a checkrein used to make a horse hold his head up.

**Beancatcher** (bō'katsh'er), *n.* a small flat curl worn on the temple by women.

**Beefwood** (bēf'wood), *n.* a red-colored wood from Australia.

**Beeswing** (bēz'wing), *n.* crust of tartar formed on wines which have been long kept.

**Befog** (be-fog'), *v.* to mystify.

**Befrizzed** (be-frizd'), *a.* having the hair frizzled.

**Befuddle** (be-fud'dl), *v.* to cloud and confuse, as with liquor.

**Beggar's-lice** (beg'garz-lis), *n.*

*pl.* prickly seeds of a plant, which adhere to the clothing.

**Begonia** (be-gō'ne-ah), *n.* a genus of hothouse plants.

**Begum** (bē'gum), *n.* an East-Indian lady of high rank.

**Bejuco** (bā-hū'kō), *n.* a thin, pliable, reed-like twining plant, of tropical America.

**Belaying-pin**(be-lā'ing-pin),*n.* a strong pin round which ropes are belayed in a ship.

**Bellbird** (bel'bird), *n.* an Australian bird, with a tinkling voice heard over two miles.

**Bellbuoy** (bel'bwoy), *n.* a buoy having a bell attached, used to mark a rock, shoal, &c.

**Belleek** (bel-lēk'), *n.* a green-glazed Irish pottery-ware.

**Bellflower** (bel'flow-er), *n.* a choice variety of apple.

**Bellows-fish** (bel'lōz-fish), *n.* a spiny fish; the trumpet-fish.

**Belongings** (be-long'ings), *n. pl.* what belongs to a person or thing; personal property.

**Belting** (belt'ing), *n.* system of belts from a steam-engine to the machinery of a factory.

**Beluga** (be-loo'gah), *n.* the white sturgeon, which furnishes isinglass and caviare.

**Bench-show** (bentsh'shō), *n.* an exhibition of dogs, &c.

**Bend** (bend), *n.* form of a ship from the keel upward.

**Bender** (bend'er), *n.* a spree; a frolic; a jollification.

**Benjamin** (ben'ja-min), *n.* a kind of English overcoat.

**Benthamic** (ben-tham'ik), *a.* pertaining to benthamism.

**Benthamism** (ben'tham-izm), *n.* the greatest happiness of the greatest number.

**Benthamite** (ben'tham-īt), *n.* a believer in benthamism.

**Benzoline** (ben'zo-lin), *n.* fluid obtained from coal tar.

**Berg** (berg), *n.* a towering mass or mountain of ice.

**Bergilt** (ber'gilt), *n.* a fish resembling the perch.

**Berlin-wool** (ber'lin-wool), *n.* a kind of fine worsted yarns.

**Berlin-work** (ber'lin-wurk), *n.* embroidery of berlin-wool.

**Bertha** (ber'tha), *n.* a kind of cape worn by ladies.

**Besique** (bā-zēk'), *n.* a French game at cards.

**Bethel** (beth'l), *n.* a house of worship for seamen.

**Bibliolater** (bib-le-ol'a-tr), *n.* a worshiper of the Bible.

**Bibliolatrist** (bib-le-ol'a-trist) *n.* one given to bibliolatry.

**Bibliolatry** (bib-le-ol'a-tre), *n.* excessive or superstitious reverence for the Scriptures.

**Biconcave** (bi-kon'kāv), *a.* concave on both sides.

**Biconvex** (bi-kon'veks), *a.* convex on both sides, as a lens.

**Bicycle** (bī'sik-l), *n.* a vehicle with large wheel in front and a small one behind, between which is the seat for the rider

**Bicycling** (bī'sik-ling), *n.* act or art of riding on a bicycle.

**Bicyclist** (bī'sik-list), *n.* one who rides on a bicycle.

**Biela's comet** (bē'la's kom'et), a short-period comet, which returns every 6½ years.

**Biforked** (bī'forkt), *a.* having two pron ; two-forked.

**Bile-duct** (bīl'dukt), *n.* a passage for bile; he tic duct.

**Biliousness** (bil'y s), *n.* the state of being bilious.

**Bimetalism** (bi-met'al-izm), *n.* the use of two metals of fixed relative values, as currency.

**Bimetalist**(bi-met'al-ist),*n.* an advocate of bimetalism.

**Bimetallic** (bī-me-tal'lik), *a.* consisting of two metals.

**Bioblast** (bī'o- last),*n.* minute mass of living protoplasm.

**Biogenesis** (bī-o-jen'e-sis), *n.* doctrine t at living matter arises from living matter.

**Biogenetic** (bī-o-je-net'ik), *a.* pertaining to biogenesis.

**Biogenist**(bi-oj'e-nist), *n.* a believer in biogenesis.

**Biogeny** (bī-oj'e-ne), *n.* origin of life from pre-existing life.

**Biological** (bī-o-loj'ik-al), *a.* pertaining to biology.

**Biologist** (bī-ol'o-jist), *n.* a student of biology.

**Biology** (bī-ol'o-je), *n.* the science of living organisms, whether animal or vegetable.

**Biolytic** (bī-o-lit'ik), *a.* destroying or impairing life.

**Biomagnetic** (bī-o-mag-net'ik) *a.* relating to biomagnetism.

**Biomagnetism** (bī-o-mag'net-izm), *n.* animal magnetism.

**Biometry** (bī-om'e-tre), *n.* calculation of the length of life.

**Bioplasm** (bī'o-plazm), *n.* the germinal self-propagating matter of living beings.

**Bioplasmic** (bī-o-plaz'mik), *a.* pertaining to or consisting of bioplasm; bioplastic.

**Bioplast** (bī'o-plast), *n.* a minute particle of bioplasm.

**Bioplastic** (bī-o-plas'tik), *a.* pertaining to bioplasm.

**Biotaxy** (bī'o-taks-e), *n.* the systematic classification of animals and plants.

**Biotite** (bī'o-tit), *n.* a magnesia-iron variety of mica.

**Birk** (birk), *n.* the birch tree.

**Birthmark** (birth'mark), *n.* a congenital mark on the skin from some prenatal cause.

**Birthroot** (birth'root), *n.* a plant of the lily family.

**Bise** (bēz), *n.* a cold northwest wind on the Mediterranean.

**Bisexual**(bi-seks'ū-al), *a.* characterized by two sexes.

**Bisque** (bisk), *n.* a soup made with shellfish.

**Bissextile year** (bis-seks'til yēr), leap year—every fourth year, having 366 days.

**Bitter-cress** (bit'tr-kres), *n.* a plant of the genus *Cardamine*

**Bitternut** (bit'tr-nut), *n.* the swamp hickory, an American tree of the walnut family.

**Bitts** (bits), *n. pl.* vertical projections in the deck of a ship, for securing ropes, &c.

**Blackbird** (blak'burd), *n.* the grackle, or American starling

**Blackcap** (blak'kap), *n.* American titmouse; the chickadee.

**Black-hole** (blak'hōl),*n.* a dark dungeon in a prison.

**Black-list**(blak'list),*n.* a list of persons deserving censure or punishment.

**Black-maria** (blak-ma-rī'ah), *n.* the close van in which prisoners are conveyed from one city prison to another.

**Black-sheep** (blak'shēp),*n.* one of a family guilty of loose conduct, and unlike the others.

**Black-silver**(blak'sil-vr),*n.* an ore of silver, consisting of silver, sulphur, and antimony.

**Blackstrap** (blak'strap), *n.* a mixture of gin and molasses.

**Blanch** (blansh), *v.* to scald or parboil vegetables or fruit, to remove their hulls or skins.

**Blase** (blah-zā'), *a.* surfeited or palled, as with pleasure, &c.

**Blastema** (blas-tē'ma), *n.* fluid capable of forming animal and vegetable tissues.

**Blasthole** (blast'hōl), *n.* hole in the bottom of a pump.

**Blastogenesis**(blas-to-jen'e-sis) *n.* increase of organisms, by budding or gemmation.

**Blather** (blath'er), *v.* to talk nonsense; to babble.

**Blazing-star** (blāz'ing-star), *n.* plant named from its flower.

**Blets** (bletz), *n. pl.* spots on decaying fruit.

**Blindfish** (blīnd'fish), *n.* a genus of fishes found in the Mammoth Cave of Kentucky.

**Blizzard** (bliz'zrd), *n.* a blinding snowstorm, with violent wind and extreme cold.

**Blockage** (blok'ij), *n.* a blocking or closing up.

**Bloodguilty** (blood'gil'te), *a.* guilty of murder.

**Bloodmoney** (blud'mun'ne), *n.* money paid to a witness for testifying on a murder-trial.

**Bloodwood** (blood'wūd), *n.* logwood, so called from its color.

**Blow** (blō), *v.* to boast; to brag.

**Blueback** (blū'bak), *n.* a species of trout found in Maine.

**Bluebottle** (blū'bot-tl), *n.* plant having blue bottle-shaped flowers: the cornflower.

**Bluecap** (blū'kap), *n.* the bluebonnet, or blue-titmouse.

**Blue-curls** (blū'kurlz), *n.* an American plant of the mint family; bastard pennyroyal.

**Blue-devils** (blū'dev'lz), *n.* lowness of spirits; hypochondria

**Blue-eyed-grass** (blū'id-gras), *n.* a plant of the iris family, with delicate blue flowers.

**Bluefish** (blū'fish), *n.* fish allied to the mackerel, but larger.

**Blue-grass** (blū'gras), *n.* a valuable kind of pasture-grass, which attains its greatest perfection in Kentucky.

**Bluejay** (blū'jā), *n.* a beautiful American bird, with bluish feathers of changing hue.

**Bluejoint** (blū'joynt), *n.* a kind of grass common on wet grounds in North America.

**Bluelight** (blū'lit), *n.* a light used as a signal in ships, &c.

**Bluepill** (blū'pil), *n.* a pill of prepared mercury. [vitriol.

**Bluestone** (blū'stōn), *n.* blue

**Bluespar** (blū'spar), *n.* a mineral of an azure blue color.

**Bluetangle** (blū'tang-gl), *n.* the same as *Dangleberry*.

**Bluff** (bluf), *v.* to bluster; to overawe;—*n.* bullying talk.

**Blunderhead** (blun'dr-hed), *n.* a stupid, awkward fellow.

**Blunging**(blunj'ing), *n.* process of softening clay for the purpose of making earthenware.

**Blunt** (blunt), *n.* money; cash.

**Bob** (bob), *n.* English slang name for a shilling.

**Bobbery** (bob'er-re), *n.* a noisy squabble; a tumult.

**Bobolink** (bob'o-link), *n.* an American singing-bird,—the reed-bird, rice-bird, or rice-bunting. [the bobolink.

**Boblincoln** (bob'ling-kun), *n.*

**Bobwhite** (bob'whīt), *n.* the popular name of the North American partridge or quail.

**Bock-bier**(bok'bēr), *n.* a strong sort of lager-beer.

**Body-snatcher** (bod'e-snatsh'er), *n.* a resurrectionist.

**Body-snatching**(bod'e-snatshing), *n.* act of stealing bodies from the grave for dissection.

**Boer** (bō'er), *n.* a South-African farmer of Dutch origin.

**Bogie** (bō'ge), *n.* a kind of four-wheeled railroad-truck.

**Bogus** (bō'gus), *a.* spurious; counterfeit;—*n.* a mixture of rum and molasses.

**Bogwhort** (bog'hwurt), *n.* the whortleberry.

**Bogwood** (bog'wood), *n.* hard jet-black wood found in peat bogs,—made into ornaments.

**Bohemian** (bo-hē'me-an), *n.* a literary man or artist of irregular or dissolute habits.

**Bohemianism** (bo-hē'me-anizm) *n.* literary vagabondism

**Bolide** (bō'lid), *n.* a large and brilliant shooting-star.

**Bolt** (bōlt), *n.* a sudden spring or start to one side; desertion of one's political party.

**Bolter** (bōlt'er), *n.* a deserter from a political party.

**Bonanza** (bo-nan'za), *n.* a mining term signifying an abundance of ore; hence, success, prosperity, good fortune.

**Boneash** (bōn'ash), } *n.* the

**Boneblack** (bōn'blak), } residue from calcined bones.

**Bonecave**(bōn'kāv), *n.* a cave in which fossil remains of prehistoric animals are found.

**Boneset** (bōn'set), *n.* medicinal plant of sudorific and tonic properties. [the tunny kind.

**Bonito** (bo-nē'to), *n.* a fish of

**Bonne** (bon), *n.* a nursemaid.

**Bonspiel**(bon'spēl), *n.* a match at the game of curling.

**Bon-vivant** (bong'vē-vong'), *n.* a jovial companion.

**Boof** (boof), *n.* peach-brandy.

**Boodie** (boo'di), *n.* money.

**Boohoo** (boo'hoo), *v.* to weep aloud; to blubber; to bawl.

**Bookmaker** (book'māk-er), *n.* a sporting man who keeps a record of his bets.

**Bookplate** (book'plāt). *n.* label on a book to indicate ownership or place in a library.

**Boom** (boom), *n.* an enthusiastic and spontaneous popular movement in favor of a person, thing, or cause.

**Boomerang** (boom'er-ang), *n.* a missile weapon used by the natives of Australia.

**Bootlick** (boot'lik), *n.* a lick-spittle; a toady.

**Bort** (bort), *n.* fragments from diamonds in cutting. [grove.

**Bosk** (bosk), *n.* a thicket; a

**Boss**(bos), *v.* to govern; to rule.

**Boston** (bos'tn), *n.* a game at cards, played by four persons with two full packs of cards.

**Bothersome** (both'er-sum), *a.* causing bother; vexatious.

**Bottle-holder** (bot'tl-hōld'er), *n.* an attendant on a prize-fighter, to supply him with water, sponge oil blood, &c.

**Bottom** (bot'tm), *n.* rich, alluvial, flat land, near a stream.

**Bottom fact** (bot'tm fakt), the whole truth in a matter.

**Bouilli**(bōōl-yē') *n.* stewed beef, served with sauce.

**Boule** (bool), *n.* a decoration of tortoise-shell and brass.

**Bourbon** (bōōr'bun), *n.* an antiquated, obstinate politician.

**Bourbonism** (bōōr'bun-izm), *n.* antiquated political notions.

**Bow-oar** (bou'ōr), *n.* the oar nearest the bow of the boat.

**Bowse** (bowz), *n.* a drinking-bout; a carouse;—*v.* to drink; to revel; to carouse.

**Boxberry** (boks'ber-re), *n.* the wintergreen, or checkerberry

**Boycott**(boy'kot), *v.* to have no dealings or communications with; to refuse to sell to, and decline to buy from; to refuse to work for or to employ.

**Braise** } (brāz), *v.* to stew, as

**Braize** } beef, vegetables, &c., in a close-covered kettle.

**Braiser** (brāz'er), *n.* a close-covered kettle for stewing.
**Braising** } (brāz'ing), *n.* a slow
**Brazing** } process of stewing.
**Branch-pilot** (branch-pi'lot) *n.* a commissioned pilot.
**Brandied** (bran'did), *a.* mixed or treated with brandy. [new
**Brand-new** (brand'nū), *a.* quite
**Brant** (brant), *n.* a wild goose.
**Brazen age** (brā'zn-āj), prehistoric age of the world which succeeded the *silver age*.
**Breadroot** (bred'root), *n.* root resembling the beet, growing near the Rocky Mountains.
**Breadwinner** (bred'win-nr), *n.* one who supports a family.
**Break** (brāk), *v.* to degrade or reduce to a lower rank.
**Breakbone** (brāk'bōn), *n.* fever causing pains in the bones.
**Breakdown** (brāk'down), *n.* a failure;—a riotous dance.
**Breastbeam** (brest'bēm), *n.* the front crossbeam of a locomotive frame; the buffer-beam.
**Breastbone** (brest'bōn), *n.* the bone to which most of the ribs are attached, in front.
**Breasthooks** (brest'hooks) *n. pl.* iron or timber knees connecting the two sides of a ship.
**Breastwheel** (brest'whēl), *n.* a wheel turned by the force of water [ov- with its center.
**Breeze** (brēz), *n.* refuse from burning coke or charcoal.
**Breezy** (brēz'e), *a.* brisk; lively.
**Breloque** (brā-lōk'), *n.* a trinket.
**Bretzel** (bret'zl), . hard brittle cake in 'orm of a ring.
**Brewing** (broo'in, ) *n.* extraction of malt liquor from grain
**Bric-a-brac** (brik'ah-brak'), *n.* a collection of articles of vertu, as of china, curios, &c.
**Brimmer** (brim'r), *n.* a drinking-cup full to the brim.
**Brit** (brit), *n.* a fish of the herring kind, 1 to 4 inches long.
**Broad-arrow** (brod-ar'ro), *n.* a British government-mark on materials used in the national ships, dockyards, &c.
**Broadbill** (brod'bil), *n.* a species of wild duck.
**Broadbrim** (brod'brim), *n.* a sportive name for a Quaker.
**Broad-gauge** (brod'gāj), *a.* noting a railroad whose width is 4 feet 8½ inches or upward.
**Broken** (brō'kn), *p. a.* shattered in body; infirm;—degraded in rank; cashiered.
**Bromatography** (brom-a-tog'ra-fe), *n.* description of foods.
**Bromatology** (brom-a-tol'o-je), *n.* a treatise on the nature, quality, and uses of food.
**Bromism** (brō'mizm), *n.* condition of the system induced by the use of bromine.
**Bronco** (bronk'ko), *n.* cross between a horse and mustang.
**Bronze age** (bronz'āj), prehistoric age characterized by implements and ornaments of copper or brass, which succeeded the *stone age*.
**Brownbread** (brown'bred), *n.* bread made of wheat or rye mixed with maize.
**Brown-thrasher** (brown-thrash'er), *n.* a song-bird of the thrush family.
**Brumous** (broo'mus), *a.* foggy.
**Brusquerie** (brus'ke-re), *n.* bluntness of speech or manner; brusqueness.
**Bubo** (bū'bo), *n.* an inflamed swelling in the groin.
**Buck** (buk), *n.* a male American Indian; also, a male negro.
**Buckshot** (buk'shot), *n.* coarse shot, used for large game.
**Buffalo-berry** (buf'fa-lo-ber're) *n.* a shrub bearing edible, acid, scarlet berries.
**Buffalo-chips** (buf'fa-lo-chips), *n.* dry dung of buffaloes, used as fuel on the prairies.
**Buffalo-clover** (buf'fa-lo-klō'vr), *n.* a species of clover common on the prairies.
**Buffalo-fish** (buf'fa-lo-fish), *n.* the American gar-pike.
**Buffalo-grass** (buf'fa-lo-gras), *n.* a species of short grass on which the buffaloes feed.
**Buffalo-nut** (buf'fa-lo-nut), *n.* a shrub of the sandal-wood family; the oilnut.
**Buffer** (buf'fr), *n.* a good-humored, jolly old fellow.
**Buffo-singer** (buf'fo-sing'er), *n.* a singer of comic songs in opera-bouffe. [protuberant
**Bulgy** (bulj'e), *a.* bulging out;
**Bull** (bull), *v.* to raise the price of stocks, illegitimately.
**Bullbrier** (bull-brī'er), *n.* a large species of brier from the root of which the Western Indians make bread.
**Bulldoze** (bull'dōz), *v.* to intimidate; to overawe; to bully.
**Bulldozer** (bull'dōz-er), *n.* one who intimidates another by violent and unlawful means.
**Bulletin-board** (bul'le-tin-bōrd) *n.* a board on which announcements are posted.
**Bullheaded** (bull'hed-ed), *a.* obstinate; unyielding.
**Bullnut** (bull'nut), *n.* a large kind of hickory-nut.
**Bullwhacker** (bull-whak'er), *n.* slang name for a cattle-driver
**Bummer** (bum'mr), *n.* a sponger; a drunken loafer.
**Burl** (burl), *n.* a knot in wood.
**Burlap** (bur'lap), *n.* a coarse fabric made of jute or hemp.
**Burning-bush** (burn'ing-bush) *n.* an ornamental shrub, bearing crimson berries.
**Burnoose** (bur-noos'), *n.* a loose cloak worn by women.
**Burnt-ear** (burnt'ēr), *n.* disease in grain, resembling smut.
**Bur-oak** (bur'ōk), *n.* a kind of oak, yielding a close-grained, tough, durable timber.
**Bus** (bus), *n.* an omnibus.
**Bushy** (buz'be), *n.* a tall, military bearskin cap.
**Bushbean** (bush'bēn), *n.* the common low garden-bean.
**Bushelman** (bush'l-man), *n.* a tailor's assistant for repairs.
**Bushman** (bush'man), *n.* one of a degraded, stunted race of South-African savages.
**Bushwhacker** (bush'whack-er) *n.* a guerilla, robber, &c., who lurks among bushes.
**Bushwhacking** (bush'whacking), *n.* making one's way through bushes;—fighting, robbing, &c., among bushes.
**Butterfly-shell** (but'tr-fli-shel) *n.* a beautiful univalve shell, resembling a butterfly.
**Butterine** (but'tr-in), *n.* oleomargarine,—artificial butter, made from animal fat.
**Butter-scotch** (but'tr-skotsh), *n.* kind of candy, composed mainly of sugar and butter.
**Buttonball** (but'tn-ball), *n.* a large tree; the buttonwood.
**Buttonhole** (but'tn-hōl), *v.* to detain in close conversation.
**Buttons** (but'tnz), *n.* a name for a boy employed as a page.
**Buttonwood** (but'tn-wood), *n.* the Western plane-tree.
**Byzantine** (biz'an-tin), *a.* relating to Byzantium, or to the Eastern empire, of which it was the capital.

C.

**Cable** (kā'bl), *v.* to send a message by telegraphic cable.

**Cablegram** (kā'bl-gram), *n.* a message by telegraphic cable.

**Cable-laid** (kā'bl-lād) *a.* twisted in the style of a cable.

**Cacaine** (ka-kā'in), *n.* essential principle of cacao.

**Cachou** (ka-shoo'), *n.* a confection to sweeten the breath.

**Cachuca** (ka-tshū'ka), *n.* lively dance by a man and woman.

**Cabinet-picture** (kab'e-net-pikt'yur), *n.* a picture of small size, for close inspection.

**Cad** (kad), *n.* a mean, vulgar, affected fellow; a snob.

**Cadaver** (ka-dā'vr), *n.* a dead human body; a corpse.

**Cadmium** (kad'me-um), *n.* a white, soft, tin-like metal.

**Cadre** (kā'dr), *n.* the frame or skeleton of a regiment, &c.

**Cæsar** (sē'zr), *n.* general name for an emperor; a kaiser.

**Cæsarism** (sē'zr-izm), *n.* personal rule; imperialism.

**Caffeine** (kaf'e-in), *n.* a bitter crystalline alkaline base, found in tea, coffee, &c.

**Caffre-bread** (kaf fr-bred), *n.* a plant found in Africa, from which bread is made.

**Cahow** (kā'how), *n.* a bird of Bermuda, the shearwater.

**Calamites** (kal'a-mits, or kal-a-mī'tēz), *n. pl.* fossil reed-like plants found in coal.

**Calcareous rocks** (kal-kā're-us roks) rocks composed of shells and coral.

**Calcaria** (kal-kā're-ah), *n.* rudimentary legs in snakes.

**Calcic** (kal'sik), *n.* chief constituent of shells and coral.

**Calcification** (kal-se-fe-kā'shun), *n.* change into lime.

**Calcified** (kal'se-fīd), *a.* formed of lime or calcareous matter.

**Calcify** (kal'se-fī), *v.* to change into lime. [of lime.

**Calcite** (kal'sīt), *n.* carbonate

**Calibration** (kal-e-brā'shun), *n.* the measurement of tubes.

**Calicium** (ka-lis'e-um), *n.* fungus patches on damp wood.

**Callus** (kal'lus), *n.* hardened skin; hard deposit on a bone.

**Calmative** (kam'a-tiv), *n.* medicine for soothing the system.

**Calorescence** (kal-o-res'ens), *n.* conversion of heat into light.

**Calorie** (kal'o-re), *n.* the French unit of measure of heat.

**Calorimeter** (kal-o-rim'e-tr), *n.* instrument to measure heat.

**Calving** (kāv'ing), *n.* breaking off of icebergs from glaciers.

**Camisole** (kam'e-sōl), *n.* dressing-jacket; straight-jacket.

**Campanile** (kam'pa-nil), *n.* the upper part of a cupola.

**Campbellite** (kam'bel-īt), *n.* one of a sect who reject creeds, taking the Bible as their guide.

**Camwood** (kam'wood), *n.* a red dyewood; barwood.

**Cannabin** (kan'na-bin), *n.* substance obtained from hemp.

**Cannille** (ka-nil'), *n.* name for shorts, or low grades of flour.

**Canned** (kand), *p. a.* preserved in airtight cans.

**Cannel-coal** (kan'nl-kōl) *n.* coal used for gas-making, &c.

**Cannery** (kan'ner-e), *n.* a place for canning meat, fruit, &c.

**Canoist** (ka-noo'ist), *n.* one who manages a canoe.

**Cant** (kant), *n.* hypocritical religious pretence; slang talk.

**Cantatrice** (kan-ta-trē'che), *n.* a female professional singer.

**Cantores** (kan-tō'rēz), *n. pl.* a general name for song-birds.

**Canyon** (kan'yon), *n.* deep narrow gorge, with steep sides.

**Cantilena** (kan-tē-lā'na), *n.* a little song; a melody.

**Cantine** (kan-tēn'), *n.* case of bottles and glasses for liquors.

**Cantiniere** (kan-tēn-yār'), *n.* a female sutler; a vivandiere.

**Cantor** (kan'tr), *n.* the leader or precentor of a choir.

**Capel** (kā'pl), *n.* rock of quartz, hornblende, and schorl.

**Capillaries** (kap'il-la-riz), *n. pl.* system of veins and arteries.

**Capitalization** (kap'e-tal-e-zā'shun), *n.* the conversion into capital, as stock or money.

**Capsicum** (kap'se-kum), *n.* a plant from which Cayenne pepper is obtained.

**Carafe** (ka-raf'), *n.* glass water-bottle for the table or toilet.

**Caramel** (kar'a-mel), *n.* a kind of confection.

**Carbolic acid** (kar-bol'ik as'id) *n.* acid obtained from coal-tar.

**Carnivora** (kar-niv'o-ra), *n. pl.* flesh-eating animals.

**Carpetbagger** (kär'pet-bag'gr), *n.* a political adventurer in a part of the country where he does not naturally belong.

**Carpus** (kär'pus), *n.* the small bones forming the wrist.

**Carrara** (kar-rah'ra), *a.* noting a marble used for statuary.

**Carry** (kar're), *n.* a portage from one river or lake to another, round waterfalls, rapids, &c.

**Cashmeret** (kash'me-ret), *n.* a fabric resembling cashmere.

**Cassolette** (kas-so-let'), *n.* a perforated scent-box.

**Cassowary** (kas'so-wa-re), *n.* a bird found in New Guinea.

**Cast-steel** (kast'stēl), *n.* steel fused and cast into bars.

**Catalpa** (ka-tal'pa), *n.* a tree of southwestern states, whose wood is of great durability.

**Catalytic** (kat-a-lit'ik), *n.* medicine to purify the blood.

**Catbird** (kat'bird), *n.* a bird allied to the mocking-bird.

**Catblock** (kat'blok), *n.* block to raise the anchor to cathead.

**Catchdrain** (katch'drān), *n.* a drain across a declivity, to intercept surface-water.

**Cathead** (kat'hed), *n.* projection from the bow of a ship.

**Catnap** (kat'nap), *n.* short sleep.

**Catoptrics** (ka-top'triks), *n.* science of the reflection of light.

**Cattle-plague** (kat'tl-plāg), *n.* contagious distemper affecting cattle and sheep.

**Caudate** (kaw'dāt), *a.* belonging to the tail; caudal.

**Cave** (kāv), *n.* the falling in of the top of a mine, &c.

**Cavendish** (kav'en-dish), *n.* a particular sort of tobacco.

**Cavette** (ka-vet'), *n.* a small concave molding.

**Cavort** (ka-vort'), *v.* to bound; to frisk; to prance.

**Cayman** (kā'man), *n.* a reptile of the crocodile kind.

**Ceiba** (sā'e-ba), *n.* the silk-cotton tree, of tropical America.

**Celebre** (se-leb'r), *a.* celebrated.

**Cello** (chel'lō), *n.* a violoncello.

**Celt** (selt), *n.* a prehistoric implement of stone or bronze.

**Centennial** (sen-ten'ne-al), *n.* commemoration of an event which occurred a hundred years previous; a centenary.

**Centralism** (sen'tral-izm), *n.* doctrine of a supreme central governmental power.

**Centralize** (sen'tral-īz), *v.* to combine detached elements into one force or power; to

increase central authority.

**Century-plant** (sen'tu-re-plant), *n.* plant that flowers once in a hundred years.

**Cepheus**(sē'fe-us), *n.* one of the northern constellations.

**Cerebration** (ser-e-brā'shun), *n.* the workings of the brain.

**Cerebro-spinal** (ser'e-bro-spī'nal), *a.* relating to the brain and spinal cord. [brain.

**Cerebrum** (ser'e-brum), *n.* the

**Cerise** (se-rēz'), *a.* cherry-colored; of a cherry color.

**Cetacea** (se-tā'sha), *n. pl.* aquatic animals, as whales, &c.

**Chablis** (shab-lē'), *n.* a white wine made in France.

**Chaff** (chaf), *n.* insincere or sportive talk;—*v.* to ridicule or befool a person by talk.

**Chaffer** (chaf'fr), *v.* to talk much and idly; to chatter.

**Chaffering** (chaf'fr-ing), *p. & a.* chirping; chattering.

**Chaffinch** (chaf'finsh), *n.* a bird of the finch family.

**Chalet** (sha-lā'), *n.* a summer hut on a mountain.

**Chamber-music** (chām'br-mū'zik), *n.* music suited for a select or private assembly.

**Champak** (cham'pak), *n.* a tree of India, having a rich odor.

**Chancre** (shank'er), *n.* a venereal sore, or ulcer.

**Chansonnette** (shon'son-net), *n.* a little song; a ditty.

**Chanterelle** (shan-ter-el'), *n.* an edible mushroom.

**Charivari** (sha-rē'va-rē'), *n.* a serenade of discordant music

**Charqui** (char'kē), *n.* strips of beef dried in the sun.

**Chartography**(char-tog'ra-fe), *n.* art of constructing maps.

**Chat** (chat), *n.* popular name of a genus of small birds; as, fallow-*chat*, stone-*chat*, &c.

**Chatelaine** (shat'e-lān), *n.* an ornamental watchguard, &c.

**Chattiness** (chat'te-nes) *n.* talkative disposition or habits.

**Chauvinism** (shō'vin-izm), *n.* fanatical patriotism.

**Chauvinist** (shō'vin-ist), *n.* an intense patriot or partisan.

**Chauvinistic**(shō-vin-is'tik), *a.* intensely partisan.

**Checkerberry** (chek'er-ber're), *n.* a creeping plant whose foliage and bright red berries have an aromatic flavor.

**Checkstring** (chek'string), *n.* a string in a carriage to call the attention of the driver.

**Cheek** (chēk), *n.* cool impudence; insolent conduct.

**Cheeky** (chēk'e), *a.* saucy; forward; impudent; insolent.

**Cheeper** (chēp'er), *n.* a name given to young gamebirds.

**Chef** (shāf), *n.* a head-cook.

**Chef-d'œuvre** (shā-doo'vr), *n.* a masterpiece, as in art, &c.

**Chelonia** (ke-lō'ne-ah), *n. pl.* tortoises and turtles.

**Cheloniphagous** (ke-lon-if'a-gus), *a.* feeding on turtles.

**Chenille** (she-nēl'), *n.* silken cord for trimming dresses.

**Cheroot** (she-rōōt'), *n.* a kind of cigar of delicate flavor.

**Cherry-bird** (cher'e-bird), *n.* the American waxwing.

**Cherry-bounce**(cher'e-bowns), *n.* cherry brandy and sugar.

**Cheviot** (chev'e-ot), *n.* a rough woolen fabric for clothing.

**Chiaroscuro**(kē-a-ro-skū'ro), *n.* the distribution of light and dark colors in paintings.

**Chic** (shēk), *n.* style; knack; manner;—*a.* stylish.

**Chiffchaff** (chif'chaf), *n.* small European song-bird.[picker.

**Chiffonier** (shif-fon-ēr'), *n.* rag-

**Chignon** (shēn'yŏn), backhair of a lady, natural or artificial

**Chigo** (chē'go), *n.* a small kind of West-Indian sand-flea.

**Chills** (chils), *n. pl.* moulds of metal in which iron is cast.

**Chimney** (chim'ne), *n.* in mining, a rich spot in a lode.

**Chimney-swallow** (chim'ne-swol'lō), *n.* a species of swift, building nests in chimneys.

**Chimpanzee** (chim-pan'zē), *n.* the African orang-outang.

**Chincapin** (chink'a-pin), *n.* the dwarf chestnut.

**Chinchbug** (chinch'bug), *n.* a bug resembling the bedbug.

**Chipmunk** (chip'munk), *n.* the small striped squirrel.

**Chipper** (chip'pr), *a.* lively; cheerful; talkative; gay.

**Chippewas** (chip'pe-wāz), *n. pl.* a tribe of American Indians.

**Chipping-bird** (chip'ing-bird), *n.* a sparrow of small size.

**Chiropody** (ki-rop'o-de), *n.* art of treating disease of the feet.

**Chokeberry** (chōk'ber-re), *n.* a shrub related to the apple.

**Chokecherry** (chōk'cher're), *n.* an astringent wild-cherry.

**Choker** (chōk'er), *n.* a cravat.

**Chop** (chop), *n.* sort; quality.

**Chordee** (kor-dē'), *n.* a painful affection of the penis.

**Chores** (chōrz), *n. pl.* the odd jobs of a household.

**Christmas-tree** (kris'mas-trē), *n.* a small evergreen tree, set up about Christmas-time.

**Chromatism** (krō'ma-tizm), *n.* aberration of rays of light.

**Chromatype** (kro-mat'e-pe), *n.* chromatype photography.

**Chrome-red**(krōm-red'), *n.* pigment obtained from red lead.

**Chromism** (krō'mizm), *n.* unnatural color of flowers, &c.

**Chromo** (krō'mo), *n.* abbreviation for *chromo-lithograph*.

**Chromogen**(krō'mo-jen), *n.* the coloring-matter of vegetables

**Chromo-lithograph** (krō'mo-lith'o-graf), *n.* a lithographic picture in oil-colors.

**Chromo-lithography** (krō'mo-le-thog'ra-fe), *n.* production of lithographs in oil-colors.

**Chromometer** (krō-mom'e-tr), *n.* device for ascertaining the chemical constitution of a body, based on its color.

**Chromo-photography**(krō'mo-fo-tog'ra-fe), *n.* art of producing colored photographs.

**Chromo-typography** (krō'mo-ti-pog'ra-fe), *n.* the art or process of printing in colors.

**Chronopher** (kron'o-fer), *n.* instrument signaling

**Chronoscope** (kron'o-skōp), *n.* apparatus for measuring the velocity of projectiles, &c.

**Chuckle** (chuk'l), *n.* a short, suppressed laugh.

**Chucklehead** (chuk'l-hed), *n.* a numskull; a dunce.

**Chucksteak** (chuk'stāk), *n.* beefsteak cut from between the neck and the collar-bone.

**Ci-devant** (sē-de-vong'), *a.* former; previous; late.

**Cigaret** (sig-a-ret'), *n.* a paper tube filled with fine tobacco.

**Cirri** (sir'rī), *n. pl.* twining appendages, tendrils, &c.

**Cirrus** (sir'rus), *n.* small light clouds. [herring kind.

**Cisco** (sis'ko), *n.* a fish of the

**Civet-cat** (siv'et-kat), *n.* a small carnivorous animal.

**Claim**(klām), *n.* a miner's term for a located space of ground.

**Clape** (klāp), *n.* golden-winged woodpecker, or flicker.

**Claque** (klăk), *n.* a band of persons hired to applaud.
**Claqueur** (klăk'ur), *n.* a hired or interested applauder.
**Clarence** (klar'ense), *n.* a close, light, four-wheeled carriage.
**Clasplock** (klasp'lok), *n.* a lock that secures itself by a spring
**Clear-stuff** (klēr'stuf), *n.* name for lumber clear of knots.
**Clientage** (klī'en-tij), } *n.* cli-
**Clientele** (klī'en-tēl), } ents collectively; body of clients.
**Clove** (klōv), *n.* a gorge in a mountain; a ravine; a gap.
**Coach** (kōch), *v.* to prepare one to pass any ordeal; to train.
**Coalheaver** (kōl'hēv'r), *n.* one who loads and unloads coal.
**Coaloil** (kōl'oil), *n.* petroleum, from being derived from coal.
**Coalpasser** (kōl'pas-er), *n.* one who passes coal to a furnace.
**Coamings** (kōm'ingz), *n.* raised edges of the hatches of a ship.
**Coastline** (kōst'līn), *n.* the line or boundary of a seacoast.
**Coati-mundi**(ko-at'e-moon'de), *n.* an animal of South America, similar to the raccoon.
**Coccyx** (kok'siks), *n.* terminal portion of the spinal column.
**Coccygeal** (kok-sij'e-al), *a.* connected with the coccyx.
**Cochlea** (kok'le-ah), *n.* spiral cavity of the internal ear.
**Cock-of-the-plains**(kok-of-the-plānz), *n.* a species of grouse found near the Pacific coast.
**Cock-of-the-rock** (kok-of-the-rok), *n.* South-American bird of brilliant orange plumage.
**Cockshy** (kok'shī), *n.* object to throw sticks, stones, &c., at.
**Cocktail** (kok'tāl), *n.* spirits sweetened, flavored, and iced
**Cocky** (kok'e), *a.* conceited; self-assertive; swaggering.
**Codilla** (ko-dil'la), *n.* coarsest part of flax or hemp; tow.
**Coiffure** (koif'fūr), *n.* style of dressing the hair.
**Coldchisel** (kōld'chiz-l), *n.* a stout, blunt steel chisel, tempered to cut cold metal.
**Coldcream** (kōld'krēm), *n.* ointment made of white wax, rose-water, almond-oil, and borax.
**Coleoptera** (kol-e-op'te-ra), *n. pl.* insects of the beetle kind.
**Collard** (kol'lard), *n.* a kind of open-leaved cabbage.
**Collodion** (kol-lō'de-un), *n.* a solution of guncotton in ether and alcohol.
**Collodionize** (kol-lō'de-un-īz), *v.* to treat with collodion.
**Colorado-beetle** (kol-o-ra'do bē'ti), *n.* a small, yellowish, destructive kind of beetle.
**Color-blind** (kul'ur-blīnd), *a.* unable to distinguish colors.
**Color-blindness** (kul'ur-blīndnes), *n.* inability to distinguish colors; daltonism.
**Color-sergeant** (kul'ur-sar'jent), *n.* sergeant who carries the colors of a regiment.
**Colostrum**(ko-los'trum), *n.* the first milk of animals after delivery; mixture of turpentine and the yolk of an egg.
**Comedown** (kum'down), *n.* a sudden descent; a downfall.
**Commode** (kom-mōd'), *n.* a convenience for a bedroom.
**Commonish** (kom'mn-ish), *a.* somewhat common.
**Compass-plant**(kum'pas-plant) *n.* a plant growing on the Western prairies, having five leaves resembling the spread fingers of the human hand, which present their edges north and south,—the rough side facing the east, and the smooth side facing the west.
**Compsognathus** (komp-sog'nath-us), *n.* a reptile which hops like a bird.
**Concha** (kong'ka), *n.* the external ear.
**Concretianism** (kon-krē'shan-izm), *n.* the doctrine that body and soul are generated and grow together.
**Conductivity** (kon-duk-tiv'e-te), *n.* quality of conducting.
**Confederacy** (kon-fed'er-a-se), *n.* a general name for Southern States during the war.
**Confidence-man** (kon'fe-dense-man), *n.* plausible swindler.
**Consensus**(kon-sen'sus), *n.* harmony; unanimity; concord.
**Consomme** (kong-som-mā'), *n.* a kind of strong broth.
**Constabulary** (kon-stab'ū-lare), *n.* the body of constables; constables collectively.
**Contango** (kon-tang'go), *n.* interest charged by brokers.
**Contretemps** (kon'tr-tong), *n.* [Fr.] unexpected accident.
**Conventionalize** (kon-ven'shun-al-īz), *v.* to establish.
**Convivium** (kon-viv'e-um), *n.* a convivial gathering.
**Coolwort** (kool'wurt), *n.* a plant of tonic properties.
**Cooper** (koop'er), *n.* a mixture of porter and stout.
**Cop** (kop), *n.* a policeman;—so called from copper badges formerly worn.
**Copperbell** (kop'pr-bel), *n.* a name of the copperhead snake
**Copperhead** (kop'pr-hed), *n.* a venomous serpent of the rattlesnake kind. [oring matter.
**Coralline** (kor'al-lin), *n.* red col-
**Cordelier** (kor'de-lēr), *n.* a machine for rope-making.
**Cordeliere** (kor-de-ly-ār'), *n.* a black knotted neckerchief.
**Cordillera** (kor-dil-lē'ra), *n.* a series of ranges of mountains
**Corespondent** (ko-re-spon'dent), *n.* an associate in a suit at law; a joint respondent.
**Corinthian** (ko-rin'the-an), *n.* order of Grecian architecture
**Corked** (korkt), *a.* tasting of the cork;—said of wine.
**Cornbread**(korn'bred), *n.* bread made of Indian-corn meal.
**Corncracker** (korn-krak'er), *n.* a native of Kentucky.
**Cornerake** (korn'krāk), } *n.* a
**Cornerow** (korn'krō), } bird which frequents cornfields.
**Corn-exchange** (korn'-eks-chānj), *n.* place where grain is sold by samples.
**Cornfritter**(korn'frit'tr) } *n.* a
**Cornoyster**(korn'oys'tr) } kind of fritter made of batter of grated green Indian corn.
**Cornsheller** (korn'shel-er), *n.* a machine to separate corn from the cob.
**Cornshuck**(korn'shuk), *n.* husk covering ears of Indian corn.
**Cornstarch** (korn'starch), *n.* a preparation of Indian corn.
**Corporealism**(kor-pō're-al-izm *n.* doctrine that the body is the only existence; materialism.
**Corpuscle** (kor'pus-sl), *n.* an ultimate organic body; a protoplasmic cell.
**Corral** (kor-ral'), *n.* inclosure for cattle;—*v.* to surround and inclose; to coop up.
**Correctible** (kor-rek'te-bl), *a.* capable of being corrected.
**Corsage** (kor'sej), *n.* the waist of a woman's dress.
**Cosey** (kō'ze), *n.* covering for a teapot, to retain the heat.
**Cosmopolitan** (koz-mo-pol'e-tn
**Cosmopolite**(koz-mop'o-lit), *n.* man of enlarged, liberal views

**Cottonade** (kot'tn-ād), *n.* stout thick fabric of cotton cloth.
**Cotton-belt** (kot'tn-belt), *n.* extent of territory adapted to the cultivation of cotton.
**Cotton-boll** (kot'tn-bōl), *n.* the pod of the cotton-plant.
**Cotton-flannel** (kot'tn-flan'nl), *n.* heavy twilled fabric of cotton cloth, with plush nap.
**Cottonmoth** (kot'tn-moth), *n.* the same as *Cotton-worm*.
**Cottonmouth** (kot'tn-mowth), *n.* a poisonous serpent.
**Cotton-press** (kot'tn-pres), *n.* a machine for pressing raw cotton into bales.
**Cotton-seed** (kot'tn-sēd), *n.* the seed of the cotton-plant.
**Cotton-waste** (kot'tn-wāst), *n.* refuse of a cotton-factory.
**Cotton-worm** (kot'tn-wurm), *n.* a destructive worm infesting the growing plants of cotton.
**Cotton-zone** (kot'tn-zōn), *n.* the girdle of the earth within which cotton can be grown.
**Count** (kownt), *n.* a terrapin over seven inches in length.
**Coupler** (kup'ler), *n.* a hook to unite railroad-cars.
**Cousinship** (kuz'n-ship), *n.* the relationship of cousins.
**Cowbird** (kow'bird), *n.* one of the American starlings.
**Cowboy** (kow'boy), *n.* a cattle drover; a herder.
**Cowper's Glands**, glands situated between the prostate and the bulb of the urethra.
**Cowtree** (kow'trē), *n.* a plant of Brazil, from which a kind of milk is obtained.
**Coxalgia** (koks-al'je-ah) *n.* pain in the hip; hip-joint disease.
**Coyote** (koy'ōt), *n.* the small barking prairie-wolf.
**Crabwood** (krab'wood), *n.* light cabinet wood from Guiana.
**Crackled** (krak'ld), *p. a.* having cracked surface, as pottery.
**Crackleware** (krak'l-wār), *n.* the same as *Cracklin*.
**Cracklin** (krak'lin), *n.* a kind of china with cracked enamel.
**Cracksman** (kraks'man), *n.* a burglar by force or violence.
**Cradle-hole** (krā'dl-hōl), *n.* little gully across a sleigh-track
**Crane** (krān), *v.* to stretch the neck forward, to see better.
**Cranial** (krā'ne-al), *a.* belonging to the cranium, or skull.
**Craniotomy** (krā-ne-ot'o-me), *n.* operation in obstetrics.
**Crank** (krank), *n.* ill-tempered, odd, or half-crazy person.
**Cranky** (krank'e), *a.* ill-humored; whimsical; odd.
**Crash** (krash), *n.* a coarse kind of linen of unbleached hemp.
**Crayon** (krā'un), *n.* pencil of carbon used in producing electric light, &c.
**Craze** (krāz), *n.* a defect in the glaze of earthenware which causes it to crack.
**Creamery** (krēm'er-e), *n.* place where milk and its products are prepared for market.
**Creeper** (krēp'er), *n.* a small iron frying-pan; a spider.
**Cremate** (kre-māt'), *v.* to consume a dead body by fire.
**Cremationist** (kre-mā'shun-ist) *n.* one who believes in burning the bodies of dead persons.
**Crematory** (krem'a-to-re), *n.* a furnace for the purpose of burning dead human bodies.
**Crepitant** (krep'e-tant), *a.* crackling; rattling.
**Crescentic** (kre-sen'tik), *a.* having the form of a crescent.
**Cretonne** (kre-ton'), *n.* a strong white fabric of hemp and flax
**Cretonnes** (kre-tonz'), *n. pl.* prints of gay patterns.
**Cribbing** (krib'bing), *n.* plank-lining of the shaft of a mine.
**Crinkly** (krink'le), *a.* having crinkles; wavy.
**Crispin** (kris'pin), *n.* a shoemaker.
**Crith** (krith), *n.* unit of weight of aeriform substances.
**Croaker** (krōk'er), *n.* small fish found on the Atlantic coast.
**Crooked whisky**, whisky on which the internal-revenue tax has been evaded.
**Crookneck** (krook'nek), *n.* a kind of curved-neck squash.
**Croon** (kroon), *v.* to sing in a low tone; to hum. [a horse.
**Cropper** (krop'pr), *n.* fall from
**Crops** (krops), *n.* parts above the shoulder of an ox.
**Croquet** (kro-kā'), *n.* an out-door game played with long mallets and wooden balls.
**Croquette** (kro-ket'), *n.* a ball of minced meat, &c., fried.
**Crossbones** (kros'bōnz), *n.* human thighbones crosswise.
**Crosscut** (kros'kut), *n.* a level cut across a vein in a mine.
**Crossing** (kros'ing), *n.* mixing of breeds; an intersection of roads; walk across a street.
**Crosslode** (kros'lōd), *n.* a lode crossing the main lode.
**Croton-oil** (krō'ton-oil), *n.* an oil forming a powerful cathartic, and also used externally.
**Crown-antler** (krown'ant-ler), *n.* highest branch of stag's horn
**Crown-wheel** (krown'whēl), *n.* a wheel having teeth cut on the edge of the rim.
**Crumbly** (krum'ble), *a.* easily crumbled; friable; brittle.
**Cruorine** (kroo'o-rin), *n.* the coloring-matter of the blood.
**Crush-hat** (krush'hat), *n.* a soft compressible hat.
**Cryptonym** (krip'to-nim), *n.* a secret or concealed name.
**Crystalline lens**, the fibrous, doubly convex lens in the eye
**Crystalloids** (kris'tal-oydz), *n. pl.* resemblances to crystals.
**Cucujo** (ku-koo'ho), *n.* a firefly found in tropical America.
**Cucumber-tree** (kū'kum-brtrē), *n.* a tree whose fruit resembles a cucumber.
**Culls** (kulz), *n. pl.* refuse timber, fish, oysters, apples, &c.
**Cult** (kult), *n.* particular form of worship or religious belief.
**Culture** (kult'yur), *n.* high civilization; refinement.
**Cultus** (kul'tus), *n.* cult; culture; worship.
**Cundurango** (kun-du-rang'go), *n.* vine growing in Ecuador.
**Cunner** (kun'ur), *n.* the salt-water perch; the chogset.
**Cupric** (kū'prik), *a.* pertaining to or obtained from copper.
**Curare** (ku-rā're), *n.* resinous substance used by Indians for poisoning their arrows.
**Curarize** (kū'ra-rīz), *v.* to poison with curare.
**Curassow** (kū-ras'sō), *n.* a bird resembling a turkey.
**Curios** (kū're-ōz), *n. pl.* curiosities, or articles of virtu.
**Curviform** (kurv'e-form), *a.* curved in shape or outline.
**Cush** (kush), *n.* a preparation of boiled crackers.
**Cuspidore** (kus'pe-dōr), *n.* an earthenware vessel to receive waste matter; a spittoon.
**Cuteness** (kūt'nes), *n.* acuteness; sharpness; smartness
**Cutis** (kū'tis), *n.* layer of true skin beneath the epidermis.
**Cutter-bar** (kut'tr-bar), *n.* bar to fasten cutting-tools.

**Cyanine** (sī'a-nin), *n.* the blue coloring-matter of flowers.

**Cymric** (kim'rik), *a.* Welsh;—*n.* Welsh language. [race.

**Cymry** (kim'ri), *n.* the Welsh

**Cypress-vine** (sī'pres-vīn), *n.* an American climbing plant.

**Cysted** (sis'ted), *a.* in a cyst.

**Cysticle** (sis'te-kl), *n.* small cyst.

**Cytode** (sī'tōd), *n.* the simplest form of independent life.

**Cytogenesis** (sit-o-jen'e-sis), *n.* the development of cells in organic structures.

**Cytogenetic** (sit-o-je-net'ik), *a.* pertaining to cell-formation.

**Cytogenous** (se-toj'e-nus), *a.* producing or forming cells.

**Cytogeny** (se-toj'e-ne), *n.* cell-formation; cytogenesis.

**Cytoplasm** (sī'to-plazm), *n.* the same as *Protoplasm.*

**Czardom** (zär'dom), *n.* the rule or authority of the Czar.

**Czarist** (zär'ist), *n.* an adherent or partisan of the Czar.

**Czarevna** (za-rev'nah), *n.* wife or consort of the czarowitz.

**Czech** (tshek), *n.* one of a branch of the Slavonic race.

## D.

**Dado** (dah'do), *n.* imitation wainscoting of paper or wood.

**Dagos** (dā'gōz), *n. pl.* name given in Louisiana to Italians, Portuguese, and Spaniards.

**Daintify** (dān'te-fy) *v.* to render dainty, delicate, or fastidious

**Dairy-farm** (dā're-farm), *n.* a farm where dairy-produce is chiefly raised.

**Dairy-produce** (dā're-prod'ūs), milk, butter, cheese, cream &c

**Daltonism** (dal'tn-izm), *n.* inability to distinguish colors.

**Dangleberry** (dang'gl-ber-re), *n.* a kind of whortleberry.

**Danites** (dan'īts), *n. pl.* a secret association of Mormons.

**Danseuse** (don-sooz'), *n.* a female dancer in public.

**Darbies** (där'bez), *n.* handcuffs, or fetters; manacles.

**Darwinian** (dar-win'e-an), *a.* pertaining to Darwinism.

**Darwinism** (dar'win-izm), *n.* the doctrine of continuous development, based on the theories of natural selection, struggle for existence, and survival of the fittest.

**Dash** (dash), *n.* a single trial of speed on a racecourse.

**Dashy** (dash'e), *a.* ostentatiously fashionable; showy.

**Davyum** (dā've-um), *n.* a silver-white, hard metal.

**Dawdle** (daw'dl), *v.* to waste time by trifling.

**Deadbeat** (ded'bēt), *n.* a plausible swindler; an artful rogue.

**Deadbroke** (ded'brōk), *a.* without money.

**Deadhead** (ded'hed), *n.* one who obtains privileges without payment.

**Deadbeat** (ded'bēt), *n.* a race in which two competitors come in even.

**Deadhouse** (ded'house), *n.* a place for temporary reception of unknown dead bodies.

**Deadlock** (ded'lok), *n.* a state of legislative affairs in which no progress can be made.

**Deadset** (ded'set), *n.* a combined attack.

**Deadwall** (ded'wal), *n.* a blank wall, unbroken by openings.

**Deadweight** (ded'wāt), *n.* a weight that impedes progress

**Deathlike** (deth'līk), *a.* resembling death.

**Deathrate** (deth'rāt), *n.* ratio of deaths to population.

**Death's-head** (deth's'hed), *n.* the skull of a dead person.

**Debeige** (de-bāzh'), *n.* a kind of goods resembling alpaca.

**Debuscope** (dē'bus-kōp), *n.* a modified kind of kalcidoscope

**Debutant** (dā-bu-tong'), *n.* one who makes his first appearance before the public.

**Debutante** (dā-bu-tont'), *n.* a female making her first appearance before the public.

**Decadent** (de-kā'dent), *a.* falling off; decaying; declining.

**Decagram** (dek'a-gram), *n.* a weight of ten grams.

**Decalcomania** (de-kal-ko-mā'ne-ah), *n.* art of transferring pictures to china, glass, &c.

**Decaliter** (dek-a-lē'tr), *n.* ten liters.

**Decarburization** (de-kar-bu-re-zā'shun), *n.* act, process, or result of decarburizing.

**Decarburize** (de-kär'bu-rīz), *v.* to deprive of carbon.

**Decaster** (dek'as-tr), *n.* a solid measure equal to ten steres.

**Decigram** (des'e-gram), *n.* one-tenth of a gram.

**Decimally** (des'e-mal-le), *ad.* in accordance with decimals, or with the decimal system.

**Decime** (dā-sēm'), *n.* a French coin, worth nearly 2 cents.

**Decister** (des'is-tr), *n.* the tenth part of a stere, or cubic meter.

**Decitizenize** (de-sit'e-zn-īz), *v.* to deprive of citizenship.

**Deckhand** (dek'hand), *n.* a worker on the deck of a vessel

**Decollette** (dā-kol-le-tā'), *a.* cut low in the neck; low-necked.

**Deerberry** (dēr'ber-re), *n.* a plant with large, greenish, mawkish berries.

**Deergrass** (dēr'gras), *n.* a plant with large, showy flowers, and bright purple petals.

**Defibrinate** (de-fī'brin-āt), *v.* to deprive of fibrin.

**Defibrination** (de-fī-bre-nā'shun), *n.* the act or process of depriving of fibrin.

**Deflected** (de-flekt'ed), *a.* bent downward; curved over.

**Defoliated** (de-fō'le-āt-ed), *a.* stripped of leaves.

**Deforest** (de-for'est), *v.* to clear of forests.

**Defrayal** (de-frā'al), *n.* act of defraying or paying, as costs.

**Deglutitory** (de-glū'te-to-re), *a.* pertaining to deglutition.

**Delaine** (de-lāne'), *n.* a fabric for ladies' dress-goods.

**Deliriant** (de-lir'e-ant), *n.* a drug which causes delirium.

**Delirifacient** (de-lir-e-fā'shent) *n.* any preparation or substance that causes delirium.

**Demi-monde** (dem'e-mōnd), *n.* a collective name for women of doubtful reputation.

**Demobilization** (de-mob-e-le-zā'shun), *n.* the disarming, disbanding, and dismissal of troops from active service.

**Demobilize** (de-mob'e-līz), *v.* to disarm, disband, and dismiss troops from active service.

**Demonetization** (de-mon-e-te-zā'shun), *n.* act of divesting money of its value.

**Demurral** (de-mur'rl), *n.* hesitation in deciding or acting.

**Denseness** (dense'nes), *n.* the state or quality of being close, compact, or thick.

**Densimeter** (den-sim'e-tr), *n.* instrument for ascertaining the specific gravity of liquids.

**Denture** (dent'yure), *n.* an artificial tooth or set of teeth.

**Deodorant**(de-ō'dr-ant),*n.* any substance which destroys or removes disagreeable odors.
**Dermalgia** (der-mal'je-ah), *n.* neuralgia of the skin.
**Derringer**(der'rin-jer)*n.* short-barreled, non-revolving pistol, carrying a large ball.
**Despotize** (des'pot-īz), *v.* to act in a despotic manner.
**Desquamate** (des'kwa-māt), *v.* to peel off in the form of scales.
**Devastator**(dev'as-tā-tr)*n.* person or thing that devastates.
**Devil's darning-needle,***n.* common name of the dragon-fly.
**Devilfish** (dev'l-fish), *n.* a large fish of hideous form;—also called *sea-devil, fishing-frog, bellows-fish, goose-fish,* &c.
**Devilment**(dev'l-ment),*n.* mischief; deviltry.
**Devilwood** (dev'l-wood), *n.* a species of olive growing in some of the Southern States.
**Dewberry** (dew'ber-re), *n.* a low species of blackberry.
**Dhow** (dow), *n.* a kind of coast vessel used in Eastern seas.
**Dinctinic**(dī-ak-tin'ik)*a.* transmitting actinic rays of light.
**Diagnose** (dī'ag-nōz), *v.* to discover a disease by diagnosis.
**Diagrammatic**(dī-a-gram-mat'-ik), *a.* exhibited or illustrated by the aid of a diagram.
**Diamonded** (dī'mund-ed), *a.* ornamented with diamonds.
**Diaphane** (dī'a-fān), *n.* woven silk stuff, with colored figures
**Diaphanie** (dī-af'a-nē), *n.* an imitation of stained glass.
**Diaphysis** (dī-af'e-sis), *n.* the middle part of a long bone.
**Diapnoic** (dī-ap-no'ik), *a.* increasing an insensible perspiration.
**Diapyetic** (dī-a-py-et'ik), *a.* promoting suppuration.
**Diastema** (dī-as-tē'ma), *n.* a gap or interval.
**Diathermometer** (dī-a-thermom'e-tr), *n.* an instrument for examination of the heat-conducting power of liquids.
**Dicker** (dik'er), *v.* to bargain; to negotiate; to barter.
**Diesinker**(dī'sink-er),*n.* an engraver of dies for coins, &c.
**Differentiate**(dif-fer-en'she-āt) *v.* to constitute a difference.
**Dilly-dally** (dil'le-dal'le), *v.* to loiter, or waste time in trifling
**Dimorphic** (dī-mor'fik), *a.* occurring under two forms.
**Dimplement** (dim'pl-ment), *n.* the state of being dimpled.
**Dingo** (ding'go), *n.* the native or wild dog of Australia.

## E.

**Earwig** (ēr'wig), *n.* a species of caterpillar.
**Ecarte** (ā-kar-tā'), *n.* a French game at cards.
**Egret** (ē'gret), *n.* a small white heron; tuft of feathers or hair
**Egyptologist**(ē-jip-tol'o-jist)*n.* one devoted to the study of Egyptian antiquities.
**Egyptology** (ē-jip-tol'o-je), *n.* the science or the study of Egyptian antiquities.
**Eidograph** (ī'do-graf), *n.* an instrument used for the reproduction of drawings.
**Elan** (ā-lon'), *n.* passionate enthusiasm; ardor; zeal.
**Electric light,** light evolved from materials heated to incandescence by the passage through them of an electric current.
**Electrogenesis** (ē-lek-tro-jen'-e-sis), *n.* the production of electricity.
**Electrogenic**(ē-lek-tro-jen'ik),
**Electrogenetic** (ē-lek-tro-je-net'ik), *a.* pertaining to the production of electricity.
**Electro-gilt** (e-lek'tro-gilt), *a.* gilded by means of voltaic electricity.
**Electro-magnetism** (e-lek'tro-mag'net-izm),*n.* the relation of electricity to magnetism.
**Electrometer**(ē-lek-trom'e-tr), *n.* instrument to measure the force of an electric current.
**Electrometry**(ē-lek-trom'e-tre *n.* art or process of making electrical measurements.
**Electropathy**(ē-lek-trop'a-the) *n.* the treatment of diseases by means of electric currents.
**Electrophone**(e-lek'tro-fōn),*n.* an instrument for producing sound by electric currents.
**Electro-plated** (e-lek'tro-plāt'-ed), *a.* plated by means of voltaic electricity.
**Electrotypic** (ē-lek-tro-tip'ik), *a.* pertaining to electrotypy.
**Elegize**(el'e-jīz),*v.* to celebrate in elegiac verse; to bewail.
**Elephantiasis**(el-e-fan-tī'a-sis) *n.* a disease of the skin. attended with deformity.
**Elite** (ā-lēt'), *n.* a choice or select body. [a tumult.
**Emeute**(ā-mūt'), *n.* an uproar;
**Emir** (ē'mir), *n.* an Arabian prince or dignitary.
**Emption** (em'shun), *n.* legal power of repurchasing.
**Emu** (ē'mū), *n.* a bird of very large size, resembling the ostrich, found in Australia.
**Encke's comet,** a comet which returns every 3¼ years.
**Endocardium** (en-do-kär'de-um), *n.* an internal lining to the human heart.
**Endogamous**(en-dog'a-mus),*a.* marrying within the limits of the same family or tribe.
**Endogamy** (en-dog'a-me), *n.* marriage to members of the same family or tribe.
**Endoscope** (en'do-skōp), *n.* an instrument for making examinations of the bladder.
**Endoskeleton**(en-do-skel'e-tu) *n.* the internal or bony structure of man and other animals
**Engorged** (en-gorjd'), *a.* congested, as an organ or vessel.
**Ensilage** (en'se-lej), *n.* a mode of preserving fresh fodder for cattle, by burying in earth.
**Enteralgia**(en-ter-al'ge-ah),*n.* pain in the intestines; colic.
**Enteritis** (en-ter-ī'tis), *n.* inflammation of the intestines.
**Entotic** (en-tot'ik), *a.* pertaining to the interior of the ear.
**Entr'acte** (on-trakt'), *n.* interval between the acts of a play
**Entree** (on-trā'), *n.* a name for a side-dish at dinner.
**Entremets** (ong-tr-mā'), *n.* a food-dainty; a delicacy.
**Entrepot** (ong-tr-pō'), *n.* a free port where goods are received and deposited, for exchange or sale.
**Entropy** (en'tro-pe), *n.* loss of energy and usefulness.
**Eon** (ē'on), *n.* a long period of time; an age.
**Eosine** (ē'o-sin), *n.* a rose-red fluorescent dyestuff for silk.
**Epical** (ep'e-kal), *a.* containing narration; narrative; epic.
**Epigastrium** (ep-e-gas'tre-um) *n.* upper part of the abdomen.
**Epileptiform** (ep-e-lep'te-form *a.* resembling epilepsy.
**Epileptoid** (ep-e-lep'toyd). *a.* resembling epilepsy; epilepti-

**Epiornis** (ep-e-or'nis), *n.* large ostrich-like bird, now extinct
**Epitaphial** (ep-e-taf'e-al), *a.* pertaining to an epitaph.
**Epsom salts**, a salt of cathartic properties, prepared from sea-water.
**Equestrienne** (e-kwes-tre-en'), *n.* a female equestrian.
**Ergo** (er'go), *ad.* therefore; consequently.
**Ermine-moth** (er'min-moth), *n.* a species of moth having wings resembling ermine.
**Errata** (er-ra'ta), *n. pl.* errors in writing or printing.
**Eruptional** (e-rup'shun-al), *a.* pertaining to eruptions.
**Erythrogen** (e-rith'ro-jen), *n.* the base of the coloring matter of the blood.
**Erythroid** (er'e-throyd), *a.* of a red color; reddish.
**Esthetics** (es-thet'iks), *n.* the science of taste and beauty.
**Etagere** (et-a-zhar'), *n.* a piece of furniture with shelves for articles of elegance or use.
**Etherize** (e'ther-iz), *v.* to put under the influence of ether.
**Ethnogeny** (eth-noj'e-ne), *n.* the origin of races and nations
**Ethnologist** (eth-nol'o-jist), *n.* a student of ethnology.
**Etiology** (e-te-ol'o-je), *n.* the science or study of causes, as exhibited in the structure of animals and plants.
**Ethnograph** (eth'no-graf), *n.* a history or description of a race or tribe of mankind.
**Etude** (a-tud'), *n.* a piece for study, in music, fine arts, &c.
**Euchre** (u'ker), *v.* to outwit; to baffle; to foil.
**Eudiometer** (u-de-om'e-tr), *n.* instrument to measure gases.
**Eudiometry** (u-de-om'e-tre), *n.* the measurement of gases.
**Eugenesic** (u-je-nes'ik) } *a.*
**Eugenetic** (u-je-net'ik) } breeding with a different species
**Eugenesis** (u-jen'e-sis), *n.* production of offspring between parents of different species.
**Euphemize** (u'fe-miz), *v.* to express in delicate language.
**Euphuism** (u'fu-izm), *n.* an affectation of extra refinement
**Euphuize** (u'fu-iz), *v.* to be fastidious in the use of language
**Eventless** (e-vent'les), *a.* without events; monotonous.
**Everglade** (ev'er-glad), *n.* a tract of low land mostly covered with water.
**Evolutional** (ev-o-lu'shun-al), *a.* relating to evolution.
**Evolutionist** (ev-o-lu'shun-ist), *n.* a believer in evolution.
**Ex** (eks), a prefix to words, signifying *out of*.
**Exacting** (eks-akt'ing), *a.* severe; hard; extortionate.
**Exactingness** (eks-akt'ing-nes) *n.* the making of and insisting upon oppressive demands.
**Exanimate** (eks-an'e-mat), *n.* destitute of life; spiritless.
**Excelsior** (eks-sel'se-ur), *a.* still higher; ever upward.
**Excretory organs**, the skin, the lungs, and the kidneys.
**Exogamous** (eks-og'a-mus), *a.* marrying out of the same tribe
**Exogamy** (eks-og'a-me), *n.* prohibition of marriage between members of the same tribe.
**Exoskeleton** (eks-o-skel'e-tu), *n.* shells of lobsters, crabs, &c.
**Ex-parte** (eks-par'te), *a.* upon or from one side only.
**Expropriate** (eks-pro'pre-at) *v.* to deprive of property.
**Expropriation** (eks-pro-pre-a'shun), *n.* act of depriving of or separating from property.
**Extradite** (eks'tra-dit), *v.* to deliver an offender to the government under which his offence was committed.
**Eyas** (i'as), *n.* a hawk too young to leave its nest.
**Eyebolt** (i'bolt), *n.* a bolt having an eye at one end.
**Eyebright** (i'brit), *n.* a herb used medicinally for the eyes.
**Eyeglass** (i'glas), *n.* spectacles.
**Eyelids** (i'lidz), *n. pl.* the folds of skin which cover the eyes.
**Eyepiece** (i'pes), *n.* lens in an optical instrument to which the eye is applied.

## F.

**Falling weather**, a rainy or snowy time.
**Faubourg** (fo'borg), *n.* a suburb in French cities.
**Faux pas** (fo-paw), a false step; a mistake.
**Fenze** (fez) *n.* condition of fretful excitement; worry.
**Femur** (fe'mur), *n.* the thigh bone.
**Fiasco** (fe-as'ko), *n.* a failure; a blunder.
**Filicide** (fil'e-sid), *n.* the murder of one's own child.
**Find** (find), *n.* something found; a discovery.
**First-class** (first-klas), *a.* of the best quality; first-rate.
**Fizzle** (fiz'zl), *n.* a failure.
**Flicker** (flik'er), *n.* the golden-headed woodpecker.
**Fluke** (fluk), *n.* an unexpected advantage.
**Foothill** (foot'hil), *n.* a lower hill at the foot of a mountain.
**Forecast** (for'kast), *n.* a prediction in regard to the future.
**Formalism** (for'mal-izm) *n.* an excessive adherence to form.
**Fourth estate**, the whole body of journalists.
**Fraud** (frawd), *n.* a deceitful person; a deceiver; a cheat.
**Fresh** (fresh), *a.* forward; bold; impudent.
**Fulminate** (ful'mne-nat), *n.* an explosive compound of great destructive power.

## G.

**Gadabout** (gad'a-bowt), *n.* one who rambles about idly.
**Gala-day** (ga'la-da), *n.* a day of mirth and festivity.
**Gallinipper** (gal'le-nip-pr), *n.* a species of large musquito.
**Gallivant** (gal'le-vant), *v.* to play the beau; to beau.
**Galoot** (ga-loot'), *n.* a worthless fellow; a rowdy.
**Gameness** (gam'nes), *n.* plucky endurance; pluck.
**Gamin** (gam'in), *n.* an unruly street-urchin.
**Gaskins** (gas'kins), *n. pl.* inner part of the thighs of a horse.
**Gassy** (gas'se), *a.* full of inflated, conceited, or deceitful talk.
**Gastric fever**, a fever accompanied with severe diarrhea.
**Gastro-enteritis** (gas'tro-en-te-ri'tis), *n.* inflammation of the intestines.
**Gastritis** (gas-tri'tis), *n.* inflammation of the stomach.
**Gastronome** (gas'tro-nom), *n.* one fond of good eating.
**Genesis** (jen'e-sis), *n.* the mode or conditions of reproduction.
**Geomancy** (je'om-an-se), *n.* the rules of wind and water.
**Get-up** (get'up), *n.* combina-

tion of parts; style of dress.

**Gingles** (jing'glz), *n. pl.* small shells, &c., on the seashore.

**Glade** (glād), *n.* tract of land covered with water, interspersed with bunches of grass, &c.

**Glamour** (glā'moor), *n.* fascination; witchery; charm.

**Gloaming** (glōm'ing), *n.* partial darkness; twilight; dusk.

**Glower** (glow'r), *v.* to regard eagerly; to stare fixedly.

**Glucose** (glū'kōse), *n.* a kind of sugar obtained from dried grapes, honey, and starch.

**Go-ahead** (gō'a-hed), *a.* progressive; pushing; energetic.

**Goatee** (goat-ē'), *n.* beard hanging down from the chin.

**Gob** (gob), *n.* a mouthful; also, the mouth.

**Go-by** (gō'by), *n.* a passing without notice.

**Godspeed** (god'spēd), *n.* prosperous issue; success.

**Goldfinch** (gold'finch), *n.* the yellow-bird; the thistle-finch.

**Gourmet** (goor-mā), *n.* a delicate eater; an epicure.

**Gram** (gram), *n.* the unit of weight, in the metric system.

**Grape-sugar** (grāp'shug-ar), *n.* the same as *Glucose*.

**Grass-widow** (gras'wid-ō), wife living apart from her husband

**Grasscloth** (gras'kloth), *n.* a fine fabric resembling linen.

**Greenback** (grēn'bak), *n.* a legal-tender U. S. bank-note.

**Greenbacker** (grēn'bak-er), *n.* an advocate of the issue of legal-tender bank-notes.

**Greenbrier** (grēn'brī-er), *n.* a climbing shrub with a prickly stem, bearing blue-black berries; the cat-brier.

**Griffe** (grif), *n.* a half-breed; a mulatto.

**Griping** (grīp'ing), *n.* exacting; extortionate; grasping.

**Grilse** (grilse), *n.* a salmon under two years old.

**Griqua** (gré'kwa), *n.* the child of a Dutch boer and Hottentot female.

**Groschen** (grosh'en), *n.* a German coin worth two cents.

**Grouper** (groop'er), *n.* a fish of the perch family.

**Grouty** (grou'te), *a.* cross-tempered; surly; irritable.

**Grubby** (grub'be), *a.* greedy; meanly avaricious.

**Guaco** (gwaw'ko), *n.* a South American plant used as an antidote to serpent-bites.

**Guipure** (gē-pūr'), *n.* an imitation of antique lace.

**Gulch** (gulch), *n.* a ravine, or dry watercourse. [deceived.

**Gullible** (gul'le-bl), *a.* easily

**Gulden** (gul'den), *n.* an Austrian silver coin, worth 40cts.

**Gunny** (gun'ne), *n.* a strong, coarse cloth, to make sacks.

**Gurry** (gur're), *n.* the offal of fish; crude fishoil.

**Gurt** (gurt), *n.* a channel for water in a mine.

**Gushing** (gush'ing), *a.* effusively sentimental; demonstratively affectionate.

**Guy** (gi), *v.* to sportively deceive: to fool.

**Gynecology** (jin-e-kol'o-je), *n.* the science of the nature and diseases of women.

**Gyratory** (jī'ra-to-re), *a.* moving in a circle.

## H.

**Habitue** (ah-bit-u-ā'), *n.* a constant attendant at a certain place. [cod family.

**Hake** (hāk), *n.* a seafish of the

**Handicap** (han'de-kap), *v.* to burden; to encumber.

**Hard-up** (hard'up), *a.* destitute of money; poverty-struck.

**Haricot** (har'e-ko), *n.* a ragout of meat and vegetables.

**Heat** (hēt), *n.* sexual excitement of animals.

**Heliotype** (hē'le-o-tīp), *n.* a sun-picture or photograph.

**Heredity** (he-red'e-te), *n.* transmission of the characteristics of parents to offspring.

**Hinny** (hin'ne), *n.* offspring of a stallion and female ass.

**Highfaluten** (hi-fa-lū'tn) high-flown language; bombast.

**Hoodlum** (hoōd'lum), *n.* a rough fellow; a young rowdy.

**Hoosier** (hoō'zher), *n.* a native of the state of Indiana.

## I.

**Ichthyotomy** (ik-the-ot'o-me), *n.* the anatomy of fishes.

**Iland** (ī'land), *n.* this is the proper spelling of *Island*.

**Impecunious** (im-pe-kū'ne-us), *a.* destitute of money; poor.

**Impecuniosity** (im-pe-kū-ne-os'e-te), *n.* the lack of money.

**Impresario** (im-pra-sah're-ō), *n.* conductor of an operatroupe.

**Insensuous** (in-sen'shu-us), *a.* not sensuous; insentient.

**Insistence** (in-sist'ence), *n.* act of insisting; persistence.

**Insistent** (in-sist'ent), *a.* persistently urgent.

**Insomnia** (in-som'ne-ah), *n.* want of sleep.

**Inaouciance** (an-soo-se-ons'), *n.* carelessness; indifference; apathy.

**Intellection** (in-tel-lek'shun), *n.* intellectual activity.

**Interaction** (in-tr-ak'shun), *n.* mutual or reciprocal action.

**Intermediary** (in-tr-mē'de-a-re), *n.* go-between; mediator.

**Itemize** (ī'tem-īz), *v.* to state in full detail.

## J.

**Jab** (jab), *v.* to thrust.

**Jackass** (jak'ass), *n.* a dolt; a very stupid person; a blockhead.

**Jamboree** (jam-bo-rē'), *n.* a drunken frolic; a spree.

**Jayhawker** (jā'hawk-er), *n.* a lawless armed man; a robber; a guerilla.

**Jeu-d'esprit** (zhū'des-prē), *n.* a witticism; a joke.

**Jibe** (jīb), *v.* to suit; to agree; to harmonize.

**Jiffy** (jif'fe), *n.* a very short time; an instant.

**Jimber-jawed** (jim'br-jawd), *a.* having a projecting lower jaw. [ium-tremens.

**Jimjams** (jim'jams), *n.* delir-

**Jimmy** (jim'me), *n.* a sharp-pointed iron lever.

**Johnny-cake** (jon'ne-kāk), *n.* bread made of the meal of Indian corn.

**Jug** (jug), *n.* a prison.

**Julienne** (jū-le-en'), *n.* a kind of vegetable soup.

**Junebug** (jūn'bug), *n.* a beetle which appears in the month of June.

## K.

**Kaiser** (kī'zr), *n.* an emperor.

**Kanaka** (ka-nah'ka), *n.* a native of the Sandwich Islands.

**Katydid** (kā'te-did), *n.* a species of grasshopper.
**Ken** (ken), *n.* a low tavern.
**Khedive** (ke-dēv'), *n.* title of the viceroy or ruler of Egypt.
**Kid** (kid), *n.* a child; a boy.
**Kilo** (kil'ō), a prefix implying one thousand.
**Kilogram** (kil'o-gram), *n.* a French measure of weight, equal to 1000 grams.
**Kiloliter** (kil'o-lī-tr), *n.* a French measure of capacity, equal to 1000 liters.
**Kilometer** (kil'o-mē-tr), *n.* a French measure of length, equal to 1000 meters.
**Kilostere** (ke'lo-stēr), *n.* a French measure of solidity, equal to 1000 steres.
**Kingbird** (king'bird), *n.* a small bird, noted for its courage in attacking larger birds.
**Kingcrab** (king'krab), *n.* a species of crab, having the form of a horse's foot.
**Kingcup** (king'kup), *n.* the buttercup.
**Knick-knack** (nik'nak), *n.* a trifle or toy; a gewgaw.
**Knowing** (nō'ing), *a.* artful; shrewd; sharp.
**Koumiss** (koo'mis), *n.* a spirituous liquor distilled from mare's or camel's milk.
**Kreutzer** (krout'zr), *n.* a small German coin.
**Krooman** (kroo'man), *n.* one of a negro race inhabiting the coast of Western Africa.

## L.

**Lacrosse** (la-kros'), *n.* a Canadian game at ball.
**Lactein** (lak'te-in), *n.* concentrated or solidified milk.
**Lambrequin** (lam'ber-kin), *n.* ornamental drapery pendent from the top of a window, &c.
**Landlordism** (land'lord-izm), *n.* the ownership of land rented to tenants; interest and influence of landowners.
**Land-warrant** (land-wor'rant), *n.* a government warrant entitling a person to a certain tract of the public lands.
**Lantern-jawed** (lan'tern-jawd) *n.* having a thin face.
**Larcenous** (lar'se-nus), *a.* characterized by larceny.
**Lark** (lark), *n.* a prank; a frolic
**Leatheret** (leth-er-et'), *n.* artificial or imitation leather.
**Liabilities** (lī-a-bil'i-tes), *n. pl.* amount of obligations or indebtedness; debts collectively
**Lightwood** (lit'wood), *n.* pine knots, dry sticks, &c., for kindling a fire.
**Lignose** (lig'nōs), *n.* an explosive compound of woody fiber and nitro-glycerine.
**Lilypad** (lil'e-pad), *n.* the broad floating leaf of the water-lily.
**Limelight** (līm'lit), *n.* a very brilliant light obtained from quicklime.
**Lingo** (ling'o), *n.* language; talk.
**Linoleum** (lin-ō'le-um), *n.* a kind of floorcloth made of hardened linseed-oil.
**Lithofracteur** (lith-o-frak'tur), *n.* a powerful explosive compound of nitro-glycerine.
**Litterateur** (lē-tā'ra-tur), *n.* a writer for the press.
**Lobbyist** (lob'be-ist), *n.* a person who frequents the lobby of a legislature for the purpose of influencing legislation
**Loony** (loon'e), *a.* crazy; mentally unsound.
**Lopsided** (lop'sid-ed), *a.* unevenly proportioned; unbalanced.
**Love-child** (luv'child), *n.* an illegitimate child.
**Lush** (lush), *n.* liquor; drink.
**Lushy** (lush'e), *a.* drunk.

## M.

**Majolica** (ma-jol'e-ka), *n.* a soft enameled earthenware.
**Menhaden** (men-hā'dn), *n.* a salt-water fish of the shad kind; the moss-bunker.
**Menu** (me-noo'), *n.* the bill of fare at a banquet.
**Mesa** (mā'sah), *n.* a table-land bordered by mountains.
**Miff** (mif), *n.* a slight degree of anger. fended.
**Miffed** (mift), *a.* slightly of-
**Moonglade** (mōōn'glād), *n.* the track of moonlight on the water.
**Moony** (mōōn'e), *a.* dreamily sentimental; moonstruck.
**Morceau** (mor-sō'), *n.* a morsel; a bit.
**Mossbunker** (mos'bunk-er), *n.* a fish of the shad kind.

## N.

**Nag** *v.* to tease; to annoy; to worry; to scold.
**Natty** (nat'te), *a.* neatly fine; spruce.
**Nickel** (nik'l), *n.* a five-cent coin made of nickel.
**Nincompoop** (nin'kum-poop), *n.* a silly fool; a blockhead.
**Nobby** (nob'be), *a.* stylish; fashionable; modish.
**Nonchalance** (nōn-sha-lons'), *n.* indifference; carelessness.
**Nonchalant** (nōn-sha-long'), *a.* indifferent; careless; cool.
**Nutrient** (nū'tre-ent), *a.* nourishing; nutritious.

## O.

**Octopus** (ok-tō'pus), *n.* a kind of cuttle-fish having eight arms.
**Oleomargarine** (ō-le-o-mär'ga-rin), *n.* artificial butter made from animal fat.
**One-horse** (wun'hors), *a.* inferior; insignificant; limited.
**Open** (ō'pn), *n.* open space of land in a forest, &c.
**Opera-bouffe** (op-er-a-bōōf'), *n.* a comic opera.
**Oroide** (ō'ro-id). *n.* an alloy resembling gold.
**Outre** (ōō-trā'), *a.* uncommon; extravagant.
**Outrigger** (owt'rig-gr), *n.* projecting rowlock of a boat.
**Outspoken** (owt-spōk'n), *a.* free-spoken; candid; frank.

## P.

**Papeterie** (pap-a-trē'), *n.* a box or case for stationery.
**Parti-colored** (pär'te-kul'urd), *a.* of various colors; variegated.
**Part-song** (pärt'song), *n.* a song in two or more parts.
**Passe** (pas-sā'), *a.* out of use; worn; faded.
**Peritonitis** (per-e-to-nī'tis), *n.* inflammation of the lining membrane of the abdomen.
**Pesky** (pesk'e), *a.* mischievous; troublesome; vexing.
**Petite** (pe-teet'), *a.* small in size; little and neat.
**Phenomenal** (fe-nom'e-nal), *a.* extraordinary; exceptional; extremely rare.

**Philogynist** (fi-loj'e-nist), *n.* a lover of women. [of women.
**Philogyny** (fi-loj'e-ne), *n.* love
**Photophone** (fō'to-fōn), *n.* an apparatus for producing articulate speech by the incidence of beams of light flashed on a sensitive diaphragm.
**Phylarch** (fī'lark), *n.* the chief of a tribe.
**Phylloxera** (fil-lox'e-ra), *n.* a species of plant-lice infesting grapevines.
**Phylogenesis** (fī-lo-jen'e-sis), *n.* the theory of the development of varied races of mankind.
**Phylogenetic** ((fī-lo-je-net'ik), *a.* pertaining to the development of a race or tribe.
**Phylogeny** (fi-loj'e-ne), *n.* descent of a tribe; tribal descent
**Physicism** (fiz'i-sizm), *n.* the science or study of physical phenomena.
**Pickaninny** (pik'a-nin-ne), *n.* [a negro baby.
**Pickerel** (pik'er-el), *n.* a fresh-water fish of the pike family.
**Pie-plant** (pī'plant), *n.* a name of the garden rhubarb.
**Pinkeye** (pink'ī), *n.* a disease in horses, resembling catarrh.
**Plucky** (pluk'e), *a.* spirited; courageous; resolute.
**Possum** (pos'sum), *n.* a common name for the opossum.
**Potency** (pō'ten-se), *n.* potential power or ability.
**Pyæmia** (pi-ē'me-ah), *n.* blood-poisoning caused by the absorption of pus.

## Q.

**Quahog** (kwaw'hog), *n.* a species of clam. [money.
**Queer** (kwēr), *n.* counterfeit
**Quod** (kwod), *n.* a prison.

## R.

**Rabies** (rā'be-ēz), *n.* rabidness; hydrophobia.
**Racker** (rak'er), *n.* a horse that moves with a racking pace.
**Ramshackle** (ram'shak-l), *a.* falling to pieces; loose; old.
**Ranchman** (ransh'man), *n.* a cattle-breeder; a herdsman.
**Rattler** (rat'lr), *n.* a rattlesnake
**Razor-fish** (rā'zr-fish), } *n.* a
**Razor-shell** (rā'zr-shel), } bivalve shellfish shaped like the handle of a razor.
**Revamp** (re-vamp'), *v.* to patch up; to make over; to renew.
**Rhino** (rī'no), *n.* money; cash.
**Rigor mortis** (rig'or mor'tis), the stiffness of death.
**Road-agent** (rōd'-ā-jent), *n.* a highway robber.
**Roue** (roo-ā'), *n.* a rake; a debauchee; a libertine.
**Roustabout** (rows'ta-bowt), *n.* a deckhand on a Western steamboat; a vagabond.
**Rowdy** (row'de), *n.* a riotous, turbulent fellow.
**Rowdyism** (row'de-izm), *n.* noisy blackguardism.
**Royalty** (roy'al-te), *n.* a sum of money paid to an inventor, owner, &c., from the product of his invention, property, &c.
**Ruche** (roosh), *n.* a delicate material of blonde, net, &c.

## S.

**Sage-brush** (sāj'brush), *n.* a low, irregular shrub, growing on the Western plains.
**Sage-cheese** (sāj'chēz), *n.* cheese flavored with sage.
**Sage-cock** (sāj'kok), } *n.* a large species of prairie-fowl; the cock-of-the-plains.
**Sage-grouse** (sāj'grouce) }
**Sage-hen** (sāj'hen), }
**Scalawag** (skal'a-wag), *n.* a mean scamp; a scapegrace.
**Scaly** (skā'le), *a.* mean; shabby.
**Scrawny** (skraw'ne), *a.* low in flesh; boneboned; scraggy.
**Scrouge** (skrowj), *v.* to squeeze; to crowd.
**Scrub-oak** (skrub'ōk), *n.* a dwarfish species of oak.
**Scrumptious** (skrum'shus), *a.* very fine or nice; excellent.
**Scuppernong** (skup'r-nong), *n.* the Southern foxgrape.
**Scurry** (skur're), *v.* to run in haste; to scud.
**Scythewhet** (sithe'whet), *n.* a species of American thrush.
**Seacat** (sē'kat), *n.* the catfish; the sea-wolf; the wolf-fish.
**Sea-devil** (sē'dev-l), *n.* the devil-fish. [coral.
**Seafern** (sē'fern), *n.* a kind of
**Seagoing** (sē'gō-ing), *a.* going to sea; seafaring.
**Seagrape** (sē'grāp), *n.* the sargassum, or gulfweed. [louse.
**Sealouse** (sē'lous), *n.* the fish-louse.
**Searaven** (sē'rā-vn), *n.* a fish of the bullhead or sculpin family
**Searobin** (sē'rob-in), *n.* a small salt-water fish; the pig-fish.
**Seaspider** (sē'spī-dr), *n.* a species of crab, having long and hairy legs; the spider-crab.
**Seatang** (sē'tang), *n.* an edible seaweed; tangle.
**Secretive** (se-krē'tiv), *a.* characterized by secretiveness.
**Sectionalism** (sek'shun-al-izm) *n.* sectional preference or feeling.
**Secularist** (sek'ū-lr-ist), *n.* one who rejects revealed religion.
**Seediness** (sēd'e-nes), *n.* shabbiness; wretchedness.
**Seed-wool** (sēd'wool), *n.* cotton not cleared of its seeds.
**Seep** (sēp), *v.* to drain or ooze out slowly.
**Seepage** (sēp'ij), *n.* liquid refuse; leakage; drainage. [moist.
**Seepy** (sēp'e), *a.* oozy; swampy;
**Self-assertive** (self-as-sert'iv), *a.* confident in assertion or manner. [self-love; egotism.
**Selfism** (self'izm), *n.* excessive
**Septæmia** (sep-tē'me-ah), *n.* poisonous infection of the blood from pus or putrid matter.
**Septicæmia** (sep-te-sē'me-ah), *n.* the same as *Septæmia*.
**Septiferous** (sep-tif'er-us), *a.* producing putrid poison.
**Septin** (sep'tin), *n.* a peculiar poison in putrefying blood.
**Shaky** (shāk'e), *a.* likely to fail; tottering; insecure; unsound; —wavering; uncertain.
**Shebang** (she-bang'), *n.* a low drinking-house; a crib.
**Shedder-crab** (shed'dr-krab) *n.* a crab which has recently cast its shell; a soft crab.
**Sheeny** (shēn'e), *n.* cant name for a Jew.
**Sheep-laurel** (shēp'law-rl), *n.* a plant of poisonous properties; also called *calf-kill* and *lamb-kill*.
**Sheepshead** (shēps'hed), *n.* a fine, large, salt-water fish.
**Shagbark** (shag'bark), } *n.* tall
**Shellbark** (shel'bark), } and handsome species of hickery.
**Shenanigan** (she-nan'e-gan), *n.* a scheming trick; trickery; chaff; foolery; nonsense.
**Shimmer** (shim'r), *n.* a quivering light; a glimmer.
**Shimmering** (shim'r-ing), *a.* gleaming tremulously; glimmering.
**Shindig** (shin'dig), *n.* a riotous dance; a shindy; a spree.

**Shindy** (shin'de), *n.* a riotous spree; a row.

**Shinplaster** (shin'plas-tr), *n.* a banknote of less value than a dollar.

**Shitepoke** (shit'pōk), *n.* a bird of [the heron species.

**Shotgun** (shot'gun) *n.* a smoothbore fowling-piece.

**Silkgrass** (silk'gras), *n.* a plant otherwise called *Bear-grass.*

**Skipper** (skip'r), *n.* a small maggot found in cheese.

**Skulduggery** (skul-dug'er-e), *n.* underhand plotting.

**Skunk-bear** (skunk'bear), *n.* the wolverine; the carcajou.

**Skunk-blackbird** (skunk'blak-bird), *n.* the marsh blackbird.

**Skunk-cabbage** (skunk'kab-ij), *n.* a strong-scented plant, of repulsive odor.

**Sky-pilot** (ski'pi-lot), *n.* slang name for a clergyman.

**Slabsided** (slab'sid-ed), *a.* having thin, flat sides; lank.

**Slopwork** (slop'wurk), *n.* work done cheaply and imperfectly

**Sneaky** (snēk'e), *a.* like a sneak; sneaking. [alcoholic liquor.

**Snifter** (snift'er), *n.* a dram of

**Snippety** (snip'et-e), *a.* ridiculously small; insignificant.

**Sociable** (sō'sha-bl), *n.* a social gathering of friends.

**Sockdolager** (sok-dol'o-jr), *n.* a heavy finishing blow; a settler

**Soft money**, paper money, as distinguished from coin.

**Soft-sawder** (soft-saw'dr), *n.* flattery; blarney.

**Soft-soap** (soft-sōp'), *n.* a kind of soap:—flattery; blarney.

**Soilpipe** (soil'pip), *n.* a drain to carry off night soil.

**Solferino** (sol-fe-rē'no), *n.* brilliant deep-pink aniline color.

**Somnambular** (som-nam'bu-lar *a.* pertaining to sleep.

**Soph** (sōf), *n.* an abbreviation of *Sophomore.*

**Soppy** (sop'e), *a.* saturated with moisture; soaked; sop-like.

**Soupcon** (soop'sōn), *n.* a very small quantity; a taste.

**Spelter** (spel'tr), *n.* crude zinc.

**Spider-crab** (spi'dr-krab), *n.* a species of crab having long and hairy legs; sea-spider.

**Spirality** (spi-ral'e-te), *n.* the state of being spiral.

**Splurge** (spurj), *n.* a blustering demonstration; a dash.

**Spondulicks** (spon-doo'liks), *n.* a slang term for money.

**Spooney** (spoon'e), *a.* weakly or foolishly fond.

**Spreadeagle** (spred-ē'gl), *a.* boastingly grandiloquent; bombastic; pompous.

**Spruced-up** (sproost'up), *a.* madeneator fine; well dressed

**Sternum** (ster'num), *n.* the breastbone.

**Stirpiculture** (stir'pe-kul-tūr). *n.* the breeding of special stocks or races.

**Stock** (stok), *n. to take stock in;* to feel confidence in. [thick.

**Stocky** (stok'e), *a.* short and

**Straight-out** (strāt'owt) *a.* pure; genuine; unsophisticated.

**Strapped** (strapt), *a.* hardup for money.

**Straw bail**, worthless bail.

**Stuckup** (stuk'up), *a.* vain and affected; conceited.

**Stuffy** (stuf'fe), *a.* angry; sulky; obstinate.

**Sucrose** (soo'krōs), *n.* sugar obtained from beets, corn, &c.

**Swell-mob** (swel'mob), *n.* well-dressed thieves, who appear like gentlemen.

## T.

**Tableaux-vivants** (tab'lō-vē-von), *n. pl.* [Fr., living pictures], groups of persons so dressed and placed as to represent paintings, statuary, &c

**Table-d'hote** (tāb'bl-dōt), *n.* the general table for guests at a hotel.

**Tachometer** (tak-om'e-tr), *n.* instrument for measurement of velocity of machinery.

**Tantrum** (tan'trum), *n.* a whim or burst of ill-humor.

**Tartuffe** (tar-tuf'), *n.* an hypocritical devotee.

**Taximeter** (ta-sim'e-tr), *n.* an instrument for detecting or measuring minute extensions or movements of solid bodies.

**Teak** (teck), *n.* an East Indian tree with very durable timber

**Teal** (teel), *n.* a water-fowl allied to the common duck.

**Team** (tēm), *n.* a number of persons associated in a performance, as in a game, &c.

**Tea-rose** (tē'rōz), *n.* a delicate rose, introduced from China.

**Tea-things** (tē'things), *n. pl.* a tea-service or tea-set.

**Technic** (tek'nik), *n.* technical skill; artistic execution.

**Technicist** (tek'ne-sist), *n.* one skilled in any practical art.

**Technique** (tek-neek'), *n.* the same as *Technic.*

**Technism** (tek'nizm), *n.* skill in technics; technicality.

**Teknology** (tek-nol'o-je), *n.* a treatise on children.

**Telegrapher** (te-leg'ra-fr), *n.* a telegraphic operator.

**Telemeter** (te-lem'e-tr), *n.* an instrument used for measuring distances.

**Telephony** (te-lef'o-ne), *n.* the art or process of reproducing sounds at a distance by means of the telephone.

**Tendo-achillis** (ten-do-a-kil'is) *n.* a tendon connecting the heel and the calf of the leg.

**Tensioned** (ten'shund), *a.* extended, or drawn out.

**Teredo** (te-rē'do), *n.* a worm that bores and penetrates the bottoms of ships.

**Terpsichore** (terp-sik'o-re), *n.* the muse that presided over singing and dancing.

**Terry** (ter're), *n.* a material of silk and worsted used in upholstery.

**Thermally** (ther'mal-e), *adv.* with reference to heat.

**Thermal unit**, a unit chosen for the comparison or calculation of the quantity of heat.

**Thermo-chemistry** (ther'mo-kem'is-tre) *n.* the science of the relations existing between chemical action and the force termed heat.

**Thermo-electrometer** (ther'mo-e-lek-trom'e-tr), *n.* an instrument for measuring the strength of an electric current by the heat which it produces.

**Thermogenous** (ther-moj'e-nus *a.* producing heat.

**Thermograph** (ther'mo-graf), *n.* an instrument which registers variations in heat.

**Thermology** (ther-mol'o-je), *n.* the science of the properties and relations of heat.

**Thermo-magnetism** (ther'mo-mag'net-izm), *n.* the science of the relations of heat and magnetism.

**Thermophone** (ther'mo-fōn), *n.* an apparatus for producing sound from heated bodies.

**Thermopile** (ther'mo-pil), *n.* an instrument for measuring

**minute differences or degrees** of heat.

**Thermostat** (ther'mo-stat), *n.* an electrical apparatus which gives an alarm of fire on the least increase of temperature.

**Thickhead** (thik'hed), *n.* a stupid person; a blockhead.

**Threnody** (thren'o-de), *n.* a song of lamentation.

**Throttle-valve** (throt'l-valv), *n.* a valve working in a pipe, so as to regulate the quantity of steam, water, &c., passing through in a given time.

**Tic-douloureux** (tik-doo-loo-roo'), *n.* neuralgia in the face

**Toady** (tōd'e), *n.* a mean flatterer; a base sycophant.

**Toggle-joint** (tog'l-joint), *n.* a bar jointed in the middle.

**Tomalley** (tom-al'le), *n.* the liver of the lobster.

**Tomcat** (tom'kat), *n.* a male cat, of large size.

**Tomcod** (tom'kod), *n.* a small fish found on the American coast; the frostfish.

**Tomfool** (tom'fool), *n.* a great fool; a trifler.

**Tomfoolery** (tom-fool'er-e), *n.* foolish trifling.

**Tomnoddy** (tom'nod-e), *n.* a fool; a dunce; a blockhead.

**Tomtit** (tom'tit), *n.* a little bird; the titmouse.

**Tonite** (tōn'īt), *n.* an explosive compound of great destructive power.

**Toupee** (too-pee'), *n.* a curl or artificial lock of hair.

**Tourmaline** (tōr'ma-lin), *n.* a mineral of the topaz group.

**Tourniquet** (toor'ne-ket), *n.* a bandage applied to prevent the flow of the blood through an artery.

**Tout-ensemble** (toot-ong-song' bl), *n.* the general effect taken as a whole.

**Trichinous** (trik'e-nus), *a.* pertaining to or infested with trichinæ.

**Tricycle** (trī'sik-l), *n.* a three-wheeled velocipede.

**Trisection** (trī-sek'shun), *n.* division into three equal parts

**Troupe** (troop), *n.* a band or company of performers, as in opera, &c. [cringing fellow.

**Truckler** (truk'lr), *n.* a servile,

**Tsar** (sar), *n.* the title of the emperor of Russia;—a better form of spelling *czar*, &c.

**Tsarina** (sah-rē'nah), *n.* the title of the empress of Russia.

**Tsarowitz** (sar'o-wits), *n.* the title of the eldest son of the emperor of Russia.

**Tulle** (tul), *n.* a kind of silk open-work or lace.

**Tunny** (tun'e), *n.* a fish of the mackerel family.

**Turbot** (tur'bot), *n.* a flat fish, with a body nearly circular.

**Turco** (tur'ko), } *n.* an Arab

**Turko** (tur'ko), } soldier in the French army, or one dressed in Eastern fashion; a zouave.

**Turcoman** (tur'ko-man), } *n.*

**Turkoman** (tur'ko-man), } one of a nomadic people dwelling in Turkestan, and parts of Turkey, Persia, Afghanistan.

**Turfite** (turf'it), } *n.* a vo-

**Turfman** (turf'man), } tary of the turf, or racecourse.

**Turntable** (turn'tā-bl), *n.* a platform capable of revolving horizontally on railroads, to turn engines, &c., around.

**Twiddle** (twid'dl), *n.* to play with or twirl with the fingers.

**Twinlike** (twin'lik), *a.* like a twin, or twins.

**Type-writer** (tip'rī-tr), *n.* an instrument for reproducing manuscripts, &c., in printed letters.

## U.

**Umbrella-bird** (um-brel'la-bird) *n.* a bird of South America, having an umbrella-like plume adorning its head and a tuft of feathers hanging from its breast.

**Unconventional** (un-kon-ven'-shun-al), *a.* not having regard to conventionalities; natural.

**Underestimate** (un-dr-es'te-māt), *v.* to undervalue;—*n.* too low an estimate; undervaluation.

**Ungrudging** (un-gruj'ing), *a.* without grudge; liberal; hearty.

**Union-jack** (ūn'yun-jak), *n.* the national flag of Great Britain.

**Unmerchantable** (un-mer'-chant-a-bl), *a.* not fit for market; unsalable.

**Unveracious** (un-ve-rā'shus) *a.* without regard for truth; untruthful.

**Unveracity** (un-ve-ras'e-te), *n.* want of veracity; untruthfulness.

**Upgrowth** (up'grōth), *n.* new growth; upspringing.

**Uræmia** (ū-rē'me-ah), *n.* a disease produced by retention of urea in the blood.

**Uræmic** (ū-rē'mik) } *a.* pertain-

**Uremic** (ū-rem'ik) } ing to or tending to produce uræmia.

**Urination** (ū-re-nā'shun), *n.* the act of passing urine.

**Urogenital** (ū-ro-jen'e-tl), *a.* relating to the urinary and reproductive organs.

**Urogenitals** (ū-ro-jen'e-tlz), *n. pl.* collective name for the urinary and reproductive organs.

**Ureter** (ū-rē'tr), *n.* a tube passing from the kidney to the bladder, conveying urine.

**Urethra** (ū-rē'thra), *n.* a tube by which the bladder is emptied

**Urinary organs**, the kidneys, ureters, bladder, urethra.

**Urinometer** (ū-re-nom'e-tr), *n.* an instrument for measuring the density of urine.

**Usquebaugh** (us-kwe-baw'), *n.* the Scotch name for whisky.

**Uterus** (ū'tr-us), *n.* the womb.

**Uvula** (ū'vu-la), *n.* a prolongation of the soft palate at the back of the mouth.

**Uxorial** (uks-ō're-al), *a.* excessively fond of a wife.

## V.

**Vaccinin** (vak'se-nin), *n.* the specific matter of cowpox.

**Vacuity** (va-kū'e-te), *n.* lack of object or interest; mental vacancy.

**Vaquero** (va-kā'ro), *n.* a man having charge of cattle, &c.

**Varicose** (vā're-kōs), *a.* dilated; swollen.

**Variolin** (va-rī'o-lin), *n.* the matter or virus of smallpox.

**Vesicle** (ves'e-kl), *n.* a small bladder. [fervor; spirit; life.

**Verve** (verv), *n.* animation;

**Via** (vī'ah), *adv.* by the way of.

**Vim** (vim), *n.* enthusiasm; energy; vigor; spirit.

**Vinaigrette** (vin-ā-gret'), *n.* a sauce made of vinegar, oil, &c

**Vin-ordinaire** (van-or-de-nair) *n.* a common French wine.

**Viperish** (vī'pr-ish), *a.* like a viper; venomous; malignant.

**Vodka** (vod'ka), *n.* a Russian liquor distilled from rye.
**Vraisemblance** (vrā-son-blons), *n.* appearance of truth; probability; likelihood.

## W.

**Wait** (wāt), *n.* a strolling musician.
**Walkover** (wawk'ō-vr), *n.* a complete and easy triumph.
**Warpath** (war'path), *n.* warlike expedition of the Indians.
**Wastage** (wāst'āj), *n.* accidental waste of a barrel, box, &c.
**Waterscape** (waw'tr-skāp), *n.* a view of the sea, lakes, &c.
**Watershed** (waw'tr-shed), *n.* the district of country drained by a river.
**Waxplant** (wax'plant), *n.* a white, fleshy plant, looking as if made of wax.
**Westernmost** (west'ern-mōst), *a.* situated farthest toward the west.
**Whole-souled** (hōl'sōld), *a.* noble-minded; free-hearted.
**Wideawake** (wid'ā-wāk), *a.* on the alert; prepared; ready.
**Wing-dam** (wing'dam), *n.* a dam extending but partly across a stream.
**Wintergreen** (win'tr-grēn), *n.* a plant of the heath family.
**Winter-killed** (win'tr-kild), *a.* killed by the cold of winter, as wheat, clover, &c.
**Wirepulling** (wire'pul-ing), *n.* political intriguing.
**Wishy-washy** (wish'e-wosh'e), *a.* insipid; trashy; weak.
**Woodchuck** (wood'chuk), *n.* a species of marmot; the ground hog.
**Woodlot** (wood'lot), *n.* a piece of land where wood for fuel, &c., grows. [of wood.
**Woodrick** (wood'rik), *n.* a pile
**Worm-fence** (wurm'fens), *n.* a rail fence laid up in a zigzag manner.
**Worriment** (wur're-ment), *n.* trouble; anxiety; worry.
**Worrisome** (wur're-sum), *a.* causing worry or annoyance.
**Wrathy** (rath'e), *a.* very angry.

## X.

**Xanthate** (zan'thāt), *n.* a combination of xanthic acid with a base.
**Xanthrophyll** (zan'thro-fil), *n.* a bright yellow coloring matter found in leaves.
**Xerodermia** (zē-ro-der'me-ah), *n.* an unnatural dryness and harshness of the skin. [ūsh.
**Xiphias** (zif'e-as), *n.* the sword-
**Xylite** (zī'lit), *n.* a mineral, chiefly iron-ore.
**Xylo** (zī'lo), a prefix implying some relation to wood.
**Xyloid** (zī'loyd), *a.* resembling wood.
**Xylene** (zī'leen), } *n.* a hydro-
**Xyloïe** (zī'lōl), } carbon prepared from coal naphtha.
**Xylophilous** (zī-lof'e-lus), *a.* growing upon, or living in, decayed wood.
**Xylophone** (zī'lo-fōn), *n.* a musical instrument consisting of pieces of wood arranged in the order of their notes, played on with two little wooden mallets.

## Y.

**Yahoo** (yah'hoo), *n.* a raw countryman; a greenhorn; a lout; a noodle. [suddenly.
**Yank** (yank), *v.* to twitch or jerk
**Yankeedom** (yank'e-dm), *n.* the New England States; also, the United States.
**Yankeefied** (yank'e-fīde), *a.* like a Yankee; Yankee fashion.
**Yankeeland** (yank'e-land), *n.* New England; also the United States.
**Yawp** (yawp), *n.* a loud outcry; —*v.* to cry out; to bawl.
**Yeleped** (e-klept'), *p. p.* called; named.
**Yearbook** (yēre'book), *n.* an annual report or summary of the statistics or facts of a year
**Yeasty** (yēst'e), *a.* like yeast; frothy; foamy.
**Yellowbird** (yel'lo-bird), *n.* a small incessorial bird of the family of finches.
**Yellowhammer** (yel'lo-ham-mr), *n.* the golden-winged woodpecker. [low fever.
**Yellow jack**, a term for the yel-
**Yellowjacket** (yel'lo-jak-et), *n.* a small but venomous wasp of yellow color.
**Yellowlegs** (yel'lo-legz), *n.* an American gamebird of the snipe family; the stone-snipe.
**Yellowroot** (yel'lo-root), *n.* a root used by the Indians as a dye, and for medical purposes
**Yellowthroat** (yel'lo-thrōt), *n.* a small singing bird of the warbler species.
**Yellowtop** (yel'lo-top), *n.* a species of herdsgrass.
**Yellowwood** (yel'lo-wood), *n.* a flowering tree of the locust family, having yellow wood used for dyeing.
**Yerba** (yer'ba), *n.* a South American holly, whose leaves are used as tea.
**Yokel** (yō'kl), *n.* a raw countryman; a greenhorn.
**Yoni** (yō'nī), *n.* the Hindoo name for the female power in Nature.
**Yopon** (yō'pn), *n.* a plant found in North Carolina, whose leaves are used as tea.
**Younker** (yunk'er), *n.* a young person; a youngster; a lad.
**Yuca** (yū'ka), *n.* a name of the mandioca, or tapioca root.
**Yucca** (yuk'ka), *n.* an American liliaceous plant; Adam's needle.

## Z.

**Zeus** (zūs), *n.* the supreme divinity in Greek mythology.
**Zither** (zith'er), } *n.* a music-
**Zithern** (zith'ern), } al instrument, having 28 strings, placed on the table before the player, and played with both hands.
**Zoon** (zō'on), *n.* an individual animal, whether mammal, bird, &c.
**Zoonic** (zo-on'ik), *a.* relating to, or derived from, animals or animal substances.
**Zootic** (zo-ot'ik), *a.* containing fossil animal remains.
**Zoroastrian** (zor-o-as'tre-an), *a.* pertaining to Zoroaster, the founder of the ancient Persian religion or Parseeism
**Zoroastrianism** (zor-o-as'tre-an-izm), *n.* the religious system founded by Zoroaster.
**Zounds** (zowndz), *interj.* an exclamation expressive of anger or wonder.
**Zygoma** (zī-gō'mah), *n.* the arch at the side of the skull.
**Zymic** (zim'ik), *a.* relating to or producing fermentation.
**Zymosis** (zi-mō'sis), *n.* a morbid condition of the blood.

## HISTORICAL & STATISTICAL TABLE OF THE UNITED STATES

AND THE TERRITORIES,

SHOWING THE AREA OF EACH IN SQUARE MILES AND IN ACRES; THE DATE OF ORGANIZATION OF TERRITORIES; AND DATE OF ADMISSION OF NEW STATES INTO THE UNION.

| The Thirteen Original States. | Ratified the Constitution. | Areas of the States. | |
|---|---|---|---|
| | | Sq. miles. | In Acres. |
| New Hampshire | June 21, 1788. | 9,305 | 5,955,200 |
| Massachusetts | Feb. 6, 1788. | 8,315 | 5,321,600 |
| Rhode Island | May 29, 1790. | 1,250 | 800,000 |
| Connecticut | Jan. 9, 1788. | 4,990 | 3,193,600 |
| New York | July 26, 1788. | 49,170 | 31,468,800 |
| New Jersey | Dec. 18, 1787. | 7,815 | 5,001,600 |
| Pennsylvania | Dec. 12, 1787. | 45,215 | 28,937,600 |
| Delaware | Dec. 7, 1787. | 2,050 | 1,312,000 |
| Maryland | April 28, 1788. | 12,210 | 7,814,400 |
| Virginia | June 25, 1788. | 42,450 | 27,168,000 |
| North Carolina | Nov. 21, 1789. | 52,250 | 33,440,000 |
| South Carolina | May 23, 1788. | 30,570 | 19,564,800 |
| Georgia | Jan. 2, 1788. | 59,475 | 38,064,000 |

| States Admitted. | Act organizing Territory. | Act admitting State. | Admission took effect. | Area in sq. miles | Area in acres. |
|---|---|---|---|---|---|
| Kentucky | Out of Virginia. | Feb. 4, 1791. | June 1, 1792. | 40,400 | 25,856,000 |
| Vermont | Out of N. H & N. Y | Feb. 18, 1791. | March 4, 1791. | 9,565 | 6,121,800 |
| Tennessee | Out of North Ca. | June 1, 1796. | June 1, 1796. | 42,050 | 26,912,000 |
| Ohio | Ordinance, 1787. | April 30, 1802. | Nov. 29, 1802. | 41,060 | 26,278, |
| Louisiana | March 3, 1805. | April 8, 1812. | April 30, 1812. | 48,720 | 31,180,800 |
| Indiana | May 7, 1800. | Dec. 11, 1816. | Dec. 11, 1816. | 36,350 | 23,264, |
| Mississippi | April 7, 1798. | Dec. 10, 1817. | Dec. 10, 1817. | 46,810 | 29,958,400 |
| Illinois | February 3, 1809. | Dec. 3, 1818. | Dec. 3, 1818. | 56,650 | 36,256, |
| Alabama | March 3, 1817. | Dec. 14, 1819. | Dec. 14, 1819. | 52,250 | 33,440, |
| Maine | Out of Mass'tts. | March 3, 1820. | March 15, 1820. | 33,040 | 21,145, |
| Missouri | June 4, 1812. | March 2, 1821. | Aug. 10, 1821. | 69,415 | 44,425,000 |
| Arkansas | March 2, 1819. | June 15, 1836. | June 15, 1836. | 53,850 | 34,464,000 |
| Michigan | January 11, 1805. | Jan. 26, 1837. | Jan. 26, 1837. | 58,915 | 37,705,000 |
| Florida | March 30, 1822. | March 3, 1845. | March 3, 1845. | 58,680 | 37,555,200 |
| Iowa | June 12, 1838. | March 3, 1845. | Dec. 28, 1846. | 56,025 | 35,856,000 |
| Texas | Annexed | March 1, 1845. | Dec. 29, 1845. | 265,780 | 170,099,200 |
| Wisconsin | April 20, 1836. | March 3, 1847. | May 29, 1848. | 56,040 | 35,865,600 |
| California | From Mexico... | Sept. 9, 1850. | Sept. 9, 1850. | 158,360 | 101,350,400 |
| Minnesota | March 3, 1849. | May 4, 1858. | May 11, 1858. | 83,365 | 53,353,600 |
| Oregon | August 14, 1848. | Feb. 14, 1859. | Feb. 14, 1859. | 96,030 | 61,459,200 |
| Kansas | May 30, 1854. | Jan. 29, 1861. | Jan. 29, 1861. | 82,080 | 52,531,200 |
| W. Virginia | Out of Virginia. | Dec. 31, 1862. | June 19, 1863. | 24,780 | 15,859,200 |
| Nevada | March 2, 1861. | March 21, 1864. | Oct. 31, 1864. | 110,700 | 70,848,000 |
| Nebraska | May 30, 1854. | Feb. 9, 1867. | March 1, 1867. | 76,855 | 49,187,200 |
| Colorado | Feb. 28, 1861. | March 3, 1875. | Aug. 1, 1876. | 103,925 | 66,512,000 |

## ORGANIZATION AND AREA OF THE TERRITORIES.

| Territories. | Act organizing Territory. | Area of Territories. | |
|---|---|---|---|
| | | Sq. miles. | In Acres. |
| New Mexico | Sept. 9, 1850. | 122,580 | 78,451,200 |
| Utah | Sept. 9, 1850. | 84,970 | 54,380,800 |
| Washington | March 2, 1853. | 69,180 | 44,275,200 |
| Dakota | March 2, 1861. | 149,100 | 95,424,000 |
| Arizona | Feb. 24, 1863. | 113,020 | 72,332,800 |
| Idaho | March 3, 1863. | 84,800 | 54,272,000 |
| Montana | May 26, 1864. | 146,080 | 93,491,200 |
| Wyoming | July 25, 1868. | 97,890 | 62,649,600 |
| Indian [no territorial government] | June 30, 1834. | 64,690 | 41,401,600 |
| District of Columbia [no territorial government] | March 3, 1791. | 70 | 44,800 |
| Alaska | July 27, 1868. | 577,390 | 365,529,600 |

## THE STATES AND TERRITORIES OF THE UNITED STATES.

Table showing the number of persons, the area in square miles, the number of families, the number of dwellings, the number of persons and of families to a square mile, the number of acres to a person, and the number of persons to a family, census of 1880.

| States and Territories. | No. of Persons. | Areas.* sq. miles. | Families | Dwell'gs | Persons to a sq. mile. | Families to a sq. mile. | Acres to a person. | Persons to a family. |
|---|---|---|---|---|---|---|---|---|
| Alabama | 1,262,505 | 51,540 | 248,961 | 240,227 | 24.50 | 4.83 | 26.13 | 5.07 |
| Arizona | 40,440 | 112,920 | 9,536 | 9,033 | 0.36 | 0.08 | 1,787.06 | 4.24 |
| Arkansas | 802,525 | 53,045 | 154,272 | 149,377 | 15.13 | 2.91 | 42.30 | 5.20 |
| California | 864,694 | 155,980 | 177,508 | 161,037 | 5.54 | 1.14 | 115.45 | 4.87 |
| Colorado | 194,327 | 103,645 | 41,260 | 39,018 | 1.87 | 0.40 | 341.35 | 4.71 |
| Connecticut | 622,700 | 4,845 | 136,885 | 108,458 | 128.52 | 28.25 | 4.98 | 4.55 |
| Dakota | 135,177 | 147,700 | 31,202 | 29,324 | 0.92 | 0.21 | 699.29 | 4.33 |
| Delaware | 146,608 | 1,960 | 28,253 | 27,215 | 74.80 | 14.41 | 8.56 | 5.19 |
| Dist. of Columbia. | 177,624 | 60 | 34,896 | 28,687 | 2,960.40 | 581.60 | 0.22 | 5.09 |
| Florida | 269,493 | 54,240 | 54,091 | 52,868 | 4.97 | 1.01 | 128.81 | 4.93 |
| Georgia | 1,542,180 | 58,980 | 303,060 | 289,474 | 26.15 | 5.14 | 24.48 | 5.08 |
| Idaho | 32,610 | 84,290 | 7,774 | 7,700 | 0.39 | 0.09 | 1,654.27 | 4.19 |
| Illinois | 3,077,871 | 56,000 | 591,934 | 538,221 | 54.96 | 10.57 | 11.64 | 5.20 |
| Indiana | 1,978,301 | 35,910 | 391,203 | 375,225 | 55.09 | 10.89 | 11.62 | 5.06 |
| Iowa | 1,624,615 | 55,475 | 310,894 | 301,507 | 29.29 | 5.60 | 21.85 | 5.23 |
| Kansas | 996,096 | 81,700 | 197,679 | 189,432 | 12.19 | 2.42 | 52.49 | 5.04 |
| Kentucky | 1,648,690 | 40,000 | 302,631 | 286,600 | 41.22 | 7.57 | 15.53 | 5.45 |
| Louisiana | 939,946 | 45,420 | 192,833 | 174,867 | 20.69 | 4.25 | 30.93 | 4.87 |
| Maine | 648,936 | 29,895 | 141,843 | 124,959 | 21.71 | 4.74 | 29.48 | 5.58 |
| Maryland | 934,943 | 9,860 | 175,318 | 155,070 | 94.82 | 17.78 | 6.75 | 5.33 |
| Massachusetts | 1,783,085 | 8,040 | 379,710 | 281,188 | 221.78 | 47.23 | 2.89 | 4.70 |
| Michigan | 1,636,937 | 57,430 | 336,973 | 321,514 | 28.50 | 5.87 | 22.45 | 4.86 |
| Minnesota | 780,773 | 79,205 | 143,374 | 136,458 | 9.86 | 1.81 | 64.92 | 5.45 |
| Mississippi | 1,131,597 | 46,340 | 215,055 | 208,290 | 24.42 | 4.64 | 26.21 | 5.26 |
| Missouri | 2,168,380 | 68,735 | 403,186 | 369,180 | 31.55 | 5.87 | 20.29 | 5.38 |
| Montana | 39,159 | 145,310 | 9,931 | 9,205 | 0.70 | 0.27 | 2,374.89 | 3.94 |
| Nebraska | 452,402 | 76,185 | 89,135 | 85,848 | 5.94 | 1.17 | 107.78 | 5.08 |
| Nevada | 62,266 | 109,740 | 15,158 | 14,557 | 0.57 | 0.14 | 1,127.96 | 4.11 |
| New Hampshire | 346,991 | 9,005 | 80,286 | 68,381 | 38.53 | 8.92 | 16.61 | 4.32 |
| New Jersey | 1,131,116 | 7,455 | 232,309 | 190,403 | 151.73 | 31.16 | 4.22 | 4.87 |
| New Mexico | 119,565 | 122,460 | 28,255 | 26,311 | 0.98 | 0.23 | 655.50 | 4.23 |
| New York | 5,082,871 | 47,620 | 1,078,905 | 772,512 | 106.74 | 22.66 | 6.00 | 4.71 |
| North Carolina | 1,399,750 | 48,580 | 270,994 | 264,305 | 28.81 | 5.58 | 22.21 | 5.17 |
| Ohio | 3,198,062 | 40,760 | 641,907 | 586,664 | 78.46 | 15.75 | 8.16 | 4.98 |
| Oregon | 174,768 | 94,560 | 33,468 | 32,374 | 1.85 | 0.35 | 346.28 | 5.22 |
| Pennsylvania | 4,282,891 | 44,985 | 840,452 | 776,124 | 95.21 | 18.68 | 6.72 | 5.10 |
| Rhode Island | 276,531 | 1,085 | 60,259 | 41,388 | 254.87 | 55.54 | 2.51 | 4.59 |
| South Carolina | 995,577 | 30,170 | 202,062 | 191,914 | 33.00 | 6.70 | 19.39 | 4.93 |
| Tennessee | 1,542,359 | 41,750 | 286,539 | 276,734 | 36.94 | 6.86 | 17.32 | 5.38 |
| Texas | 1,591,749 | 262,290 | 297,259 | 287,562 | 6.07 | 1.13 | 105.46 | 5.35 |
| Utah | 143,963 | 82,190 | 28,373 | 26,710 | 1.75 | 0.35 | 365.38 | 5.07 |
| Vermont | 332,286 | 9,135 | 73,092 | 66,769 | 36.38 | 8.00 | 17.59 | 4.55 |
| Virginia | 1,512,565 | 40,125 | 282,355 | 265,611 | 37.70 | 7.04 | 16.98 | 5.36 |
| Washington | 75,116 | 66,880 | 16,380 | 15,512 | 1.12 | 0.24 | 569.83 | 4.59 |
| West Virginia | 618,457 | 24,645 | 111,732 | 108,349 | 25.09 | 4.53 | 25.50 | 5.54 |
| Wisconsin | 1,315,497 | 54,450 | 251,530 | 239,361 | 24.16 | 4.62 | 26.49 | 5.23 |
| Wyoming | 20,789 | 97,575 | 4,604 | 4,282 | 0.21 | 0.05 | 3,063.90 | 4.52 |
| **United States** | 50,155,783 | 2,900,170 | 9,945,916 | 8,955,812 | 17.29 | 3.43 | 37.01 | 5.04 |

* Land surface only. The total given for the United States is exclusive of the Indian Territory and tracts of unorganized territory, aggregating 69,830 square miles.

## POPULATION, CAPITALS, AND AREA OF ALL NATIONS.

| Countries. | Capitals. | Population. | Area Square Miles. | Inhabitants to Square Mile. |
|---|---|---|---|---|
| Algeria | Algiers | 2,867,626 | 165,500 | 17.00 |
| Argentine Republic | Buenos Ayres | 2,400,000 | 827,177 | 2.90 |
| Austria-Hungary | Vienna | 37,741,413 | 240,415 | 156.98 |
| Belgium | Brussels | 5,476,668 | 11,369 | 481.71 |
| Bolivia | La Paz | 2,080,000 | 500,740 | 4.15 |
| Brazil | Rio de Janeiro | 10,108,291 | 3,218,166 | 3.14 |
| Canada, Dominion of | Ottawa | 4,352,080 | 3,204,381 | 1.35 |
| Cape of Good Hope | Cape Town | 720,984 | 199,950 | 4.00 |
| Ceylon | Colombo | 2,758,166 | 24,702 | 111.65 |
| Chili | Santiago | 2,400,396 | 124,084 | 19.34 |
| Chinese Empire | Pekin | 434,626,000 | 4,560,107 | 95.31 |
| Colombia, United States of | Bogota | 2,951,323 | 320,638 | 9.20 |
| Costa Rica | San José | 180,000 | 26,040 | 67.00 |
| Denmark | Copenhagen | 1,969,454 | 14,784 | 133.21 |
| Ecuador | Quito | 1,146,003 | 248,312 | 4.61 |
| Egypt | Cairo | 17,419,980 | 1,152,948 | 15.19 |
| France | Paris | 36,905,788 | 204,030 | 180.88 |
| Germany | Berlin | 45,194,172 | 208,624 | 216.62 |
| Great Britain and Ireland | London | 35,246,633 | 121,571 | 289.92 |
| Greece | Athens | 1,679,775 | 20,018 | 83.91 |
| Guatemala | Santiago deGuatemala | 1,215,310 | 41,230 | 26.00 |
| Hayti | Port-au-Prince | 572,000 | 10,204 | 54.00 |
| Honduras | Comayagua | 250,000 | 39,500 | 9.00 |
| Hong Kong | Hong Koug | 139,444 | 29 | 48.00 |
| India, British | Calcutta | 252,541,210 | 810,542 | 311.57 |
| Italy | Rome | 28,209,620 | 114,380 | 246.63 |
| Japan | Yeddo | 34,338,404 | 146,568 | 234.28 |
| Java | Batavia | 19,067,829 | 51,336 | 366 |
| Liberia | Monrovia | 1,068,000 | 14,300 | 76.00 |
| Mauritius | Port Louis | 357,339 | 676 | 53.00 |
| Mexico | Mexico | 9,389,461 | 741,598 | 12.66 |
| Montenegro | Cettigne | 250,000 | 3,550 | 70.00 |
| Morocco | Morocco | 6,370,000 | 313,560 | 20.31 |
| Natal | Port Natal | 406,675 | 21,150 | 19.00 |
| Netherlands | s'Gravenhage | 3,981,887 | 12,727 | 312.86 |
| New South Wales | Sidney | 503,981 | 310,938 | 1.5 |
| New Zealand | | 534,068 | 105,342 | 5.00 |
| Nicaragua | Managua | 350,000 | 49,500 | 7.00 |
| Norway | Christiana | 1,806,900 | 122,823 | 14.71 |
| Paraguay | Asencion | 293,844 | 91,980 | 3.19 |
| Persia | Teheran | 7,000,000 | 636,203 | 11.00 |
| Peru | Lima | 3,050,000 | 72,413 | 42.11 |
| Portugal | Lisbon | 4,348,551 | 34,595 | 125.69 |
| Queensland | Brisbane | 213,525 | 669,520 | 0.34 |
| Roumania | Bucharest | 5,376,000 | 50,159 | 107.17 |
| Russian Empire | St. Petersburg | 82,330,864 | 8,138,541 | 10.11 |
| San Domingo | San Domingo | 250,000 | 18,045 | 14.00 |
| San Salvador | San Salvador | 554,785 | 9594 | 57.00 |
| Servia | Belgrade | 1,589,650 | 18,781 | 84.64 |
| Siam | Bangkok | 5,750,000 | 280,564 | 20.49 |
| South Australia | Adelaide | 279,865 | 903,690 | 3.00 |
| Spain | Madrid | 16,333,293 | 193,171 | 84.55 |
| Sweden | Stockholm | 4,531,863 | 170,927 | 26.51 |
| Switzerland | Berne | 2,831,787 | 15,908 | 177.10 |
| Tunis | Tunis | 2,100,000 | 42,000 | 50.00 |
| Turkey | Constantinople | 25,036,480 | 860,322 | 29.10 |
| Uruguay | Montevideo | 447,000 | 72,151 | 6.19 |
| United States | Washington | 50,155,783 | 3,602,990 | 13.92 |
| Venezuela | Caracas | 1,784,197 | 439,119 | 4.06 |

# APPENDIX.

## A.

| | BORN. | DIED. |
|---|---|---|
| **Aaron. First High Priest of the Jews** | 1574.. | 1451 B.C. |
| Abbot, Joseph Hale. Scientist, Philologist, Teacher | 1802.. | 1873 |
| Abbott, John Stevens Cabot. American Historian | 1805.. | 1877 |
| Abd-El-Kader. Arab Prophet and Military Chieftain | 1807.. | 1879 |
| Abdul-Aziz. Sultan of Turkey | 1830.. | 1876 |
| Abell, Mrs. Elizabeth. (*Memoirs of the First Napoleon*) | — .. | 1871 |
| Abercrombie, John J. Bvt. Brigadier-General, U. S. Vols. | 1804.. | 1877 |
| Abercromby, David, M. D. Medical and Miscel. Writer | — .. | 1701 |
| Abert, John J. American Engineer | 1790.. | 1863 |
| Abijah. King of Judah (B. C. 958–955) | — | B.C.955 |
| Abner. Captain of Saul, King of Israel | — | B.C.1048 |
| Abraham. Patriarch | 1996.. | 1821 B. C. |
| Absalom, son of David, King of Israel | — | B.C.1021 |
| Achard, Louis Amédée Eugene. French Writer | 1814.. | 1875 |
| Acton, Charles Januarius Edward. English Cardinal | 1803.. | 1847 |
| Acworth, George, LL. D. Civilian and Controversialist | — .. | 1577? |
| Adalbert, Heinrich Wilhelm. Prussian Admiral | 1811.. | 1873 |
| Adalbert, William George Lewis. Prince of Bavaria | 1828.. | 1875 |
| Adams, Clement. Author of Travels | 1519.. | 1587 |
| Adams, Daniel, M. D. Author of School Text-books | — .. | 1863 |
| Adams, Edwin. American Actor | 1834.. | 1877 |
| Adams, Richard. Poet | — .. | 1661 |
| Adamson, John. Author | 1787.. | 1855 |
| Addison, John, D. D. Roman Catholic Writer | fl. | 1538 |
| Ade, Charles. Antiquary and Artist | — .. | 1858 |
| Adler, George J., PH. D. Ger. Scholar and Philologist | 1821.. | 1868 |
| Afzelius, Arvid August. Swedish Historian | 1785.. | 1871 |
| Agassiz, Louis Jean Rodolphe, M. D., PH. D., F. R. S. Scientist. Professor in Harvard College | 1807.. | 1873 |
| Agoult, Marie Catherine Sophie de Flavigny, Countess d'. *Daniel Stern.* Authoress | 1805.. | 1876 |
| Ahab. King of Israel (B. C. 918–897) | — | B.C.897 |
| Ahaz. King of Judah (B. C. 742–726) | — | B.C.726 |
| Ahaziah, son of Ahab. King of Israel (B. C. 897–896) | — | B.C.896 |
| Ahaziah, son of Jehoram. King of Judah (B. C. 885–884) | 926.. | 884 B. C. |
| Aikins, Arthur. Scientist and Writer | 1773.. | 1854 |
| Aird, Thomas. British Poet | 1802.. | 1876 |
| Alberi, Eugenio. Italian Historian | 1809.. | 1878 |
| Albrecht, Wilhelm Eduard. Ger. Jurist and Scholar | 1800.. | 1876 |
| Aldini, John. Italian Experimental Philosopher | 1762.. | 1834 |
| Aldridge, Ira. "The African Roscius." Negro Actor | 1805?.. | 1867 |
| Alencar, Jose Martiniano de. Brazilian Statesman and Auth. | 1829.. | 1877 |

BORN. DIED.

**Alexander**, Barton Stone. American Engineer..... 1819..1878
**Alexander**, James Waddell, D. D. Amer. Scholar and Writer. 1804..1859
**Alexander**, John H. American Chemist and Physicist..... 1813..1867
**Alexander**, Joseph Addison, D. D., Br. Div. and Linguist.... 1809..1860
**Alexandra**, Amelia. Princess of Bavaria..... 1826..1875
**Alford**, Rev. Henry, D. D. Eng. Clergyman, Poet, Philologist. 1810..1871
**Alice**, Maud Mary. Princess of England, Grand Duchess of Hesse-Darmstadt..... 1843..1878
**Alison**, Sir Archibald, Baronet, D. C. L. British Author..... 1792..1867
**Alkmar**, Henry von. German Writer. (*Reineke de Voss.*)... fl. 1475
**Allen**, David Oliver. American Missionary and Writer..... 1800..1863
**Allen**, or Alen, Edmund. Bishop elect of Rochester. Theol. — ..1559
**Allen**, George A. American Lawyer and Editor..... 1822..1878
**Allen**, Henry Watkins. "Confederate" Brigadier-General... 1820..1866
**Allen**, John. Bibliographer..... — ..1831
**Allen**, Richard L. Editor and Agriculturist. (*The American Farm Book.*)..... 1803..1869
**Allen**, William, D. D. Amer. Scholar, Teacher and Author... 1784..1868
**Allen**, William. American Lawyer, Senator, Governor..... 1806..1879
**Allot**, Wm. Roman Catholic Divine. (*Thesaurus Bibliorum.*) — ..1590?
**Almonte**, Juan. Mexican General and Statesman..... 1812?.1869
**Alzog**, Johann Baptist. Roman Catholic Theologian..... 1808..1878
**Amat**, di San Filippo e Sorso, Luigi. Vice-Chancellor of the Holy Roman Church..... 1796..1878
**Amaziah**. King of Judah (B. C. 839–810)..... 863..810 B. C.
**Amberly**, John. British Statesman. (*Analysis of Religious Belief.*)..... 1842..1876
**Ambros**, August Wilhelm. German Composer and Author... 1816..1876
**Ames**, Edward R. American Preacher and Bishop..... 1806 .1879
**Ames**, Joseph, N. A. American Portrait Painter..... 1816..1872
**Ames**, Oakes. American Manufacturer..... 1804..1873
**Ammen**, Frederick Augustus von. German Medical Writer.. 1799..1861
**Amon**. King of Judah (B. C. 643–641)..... 665..641 B. C.
**Amos**. Prophet of Israel..... fl. B. C. 787
**Amyot**, Thomas. Treas. Soc. Ant. (*Life of Windham.*)..... 1775..1850
**Anastasius Grün**. (*See* Auersperg.)
**Ancelot**, James Arsène Francis Polycarp. French Dram..... 1794..1854
**Ancelot**, Marguerite Louise Virginie Chardou. Fr. Authoress 1792..1875
**Ancessi**, M. l'Abbé Victor. Semitic Scholar..... 1845..1878
**Andersen**, Hans Christian. Danish Author. (*Fairy Tales.*) 1805..1875
**Anderson**, Dr. Alexander. American Wood Engraver..... 1774..1870
**Anderson**, George B. "Confederate" General..... 1834?.1862
**Anderson**, Henry James, M. D. American Scientist..... 1798..1875
**Anderson**, Richard H. "Confederate" Lieutenant-General.. 1816..1879
**Anderson**, Robert. Brevet Major-General..... 1805..1871
**Andersson**, Charles John. African Explorer and Author.... 1812?.1868
**Andlaw**, Franz Xaver von. German Diplomatist..... 1799..1876
**Andral**, Gabariel. French Physician..... 1797..1853
**Andree**, Karl. German Geographer..... 1808..1875
**Andrew**, John Albion. American Statesman..... 1818..1867
**Angell**, Joseph Kinnicutt. American Law Writer..... 1794..1857

| | BORN. | DIED. |
|---|---|---|
| **Angouleme**, Louis Anthony de Bourbon, Duc d', son of Charles X. | 1775 | 1844 |
| **Angus**, Caleb. Agriculturist and Writer on Free Trade. | 1782 | 1860 |
| **Anlaby**, William. Roman Catholic Missionary; martyred. | — | 1597 |
| **Annesley**, Alexander. Legal and Political Writer. | — | 1813 |
| **Anne**, Louis François Theodore. Fr. Soldier, Polit., Novelist. | 1797 | 1869 |
| **Anschutz**, Karl. German Musical Composer. | 1813 | 1870 |
| **Anthon**, Charles. Amer. Class. Scholar, Têacher and Author. | 1797 | 1867 |
| **Antinori**, Vincent, of Florence. Scholar. | — | 1865 |
| **Antonelli**, Giacomo. Cardinal Deacon. | 1806 | 1876 |
| **Antonucci**, Antonio Benedetto. Italian Cardinal. | 1798 | 1879 |
| **Appleton**, Dr. Charles Edward C. B. English Journalist. (Founder of the *Academy*.) | 1841 | 1879 |
| **Appleton**, George S. American Publisher. | 1821 | 1878 |
| **Appleton**, Nathan. American Merchant. | 1779 | 1861 |
| **Arago**, James Stephen Victor. Fr. Journalist and Author. | 1790 | 1855 |
| **Arcano**, Mauro d'. *Il Mauro*. Italian Burlesque Poet. | 1490? | 1536 |
| **Argelander**, Friedrich Wilhelm August. Ger. Astronomer. | 1799 | 1875 |
| **Argentine**, Richard, M. D. *Sexten*. Roman Catholic Writer. | — | 1568 |
| **Arjona**, Manuel de. Spanish Ecclesiastic and Poet. | 1761 | 1820 |
| **Arlincourt**, Victor, Viscount d'. French Poet and Novelist. | 1789 | 1856 |
| **Armansperg**, Joseph Louis, Count von. German Statesman. | 1787 | 1853 |
| **Armellini**, Charles. Italian Patriot. | 1776 | 1863 |
| **Armengaud**, Jean Germain Désiré. French Art Historian and Critic. | 1797 | 1869 |
| **Armistead**, Lewis A. "Confederate" General. | — | 1863 |
| **Armsby**, James H. American Physician. | 1809 | 1875 |
| **Armstrong**, Robert Archibald. Scottish Philologist. | 1788 | 1867 |
| **Arnaud**, Frédéric. French Senator and Author. | 1819 | 1878 |
| **Arnot**, William. Scottish Preacher and Author. | 1808 | 1875 |
| **Arnott**, Dr. Archibald. Scotch Physician. | 1771 | 1855 |
| **Arnott**, Neil. Brit. Physician, Physicist, Philanthropist. | 1788 | 1874 |
| **Arrest**, Heinrich Ludwig d'. German Astronomer. | 1822 | 1875 |
| **Arrowsmith**, Edmund. Jesuit; executed. | — | 1628 |
| **Asaky**, George. Moldavian Poet, Historian, Journalist. | 1788 | 1869 |
| **Asboth**, Alexander Sandor. Bvt. Major-General U. S. Vols. Companion of Kossuth. | 1811 | 1868 |
| **Ashby**, Turner. "Confederate" General. | 1824? | 1862 |
| **Ashe**, Thomas. *Captain Ashe*. Author of Travels. | — | 1835 |
| **Ashmun**, George. American Lawyer and Politician. | 1804 | 1870 |
| **Ashpitel**, Arthur, F. S. A. Architect and Writer. | 1807 | 1869 |
| **Aspinwall**, William H. American Merchant. | 1807 | 1875 |
| **Asplin**, Rev. William. Theologian. (*Alkibla*). | — | 1758 |
| **Assarotti**, Octavius John Bapt. Teacher of Deaf and Dumb. | 1735 | 1829 |
| **Aster**, Ernest Louis. German General. | 1778 | 1855 |
| **Aston**, William. Jesuit. Writer. | — | 1800 |
| **Astor**, William Backhouse. American Capitalist. | 1792 | 1875 |
| **Athaliah**. Usurping Queen of Judah. | — B.C. | 878 |
| **Athanagildus**. Gothic King in Spain. | — | 567 |
| **Atherton**, Charles Gordon. American Politician. | 1804 | 1853 |
| **Atherton**, John. Bishop of Waterford; executed. | — | 1640 |

BORN. DIED.

Attalus I. King of Pergamus (B. C. 241–197)..... 268?..197 B.C.
Attalus II. (B. C. 159-138.) *Philadelphus*..... 220...138 B.C.
Attalus III. (B. C. 138–133.) *Philometor*..... — B.C. 133
Atterborn, Peter Daniel Amadeus. Swedish Poet..... 1790..1855
Auber, Daniel François Esprit. French Musical Composer.. 1782..1871
Audley, Mervyn, Lord, and Earl of Castlehaven ; executed... — ..1631
Audubon, Mrs. Lucy Bakewell, wife of J. J. Audubon..... 1786..1874
Auenbrugger von Auenbrug, Leopold. Physician at Vienna. Inventor of Percussion..... 1722..1809
Auersperg, Anton Alexander, Count von. *Anastasius Grün.* Austrian Statesman and Poet..... 1806..1876
Auffenberg, Joseph von, Baron. German Dramatist..... 1798..1857
Aufrere, Anthony. Miscellaneous Writer and Translator.... 1756?..1833
Augur, Hezekiah. American Sculptor..... 1791..1858
Augusti, Christian John William. German Theologian..... 1771..1841
Auld, John Blakely. American Editor and Author..... 1815..1866
Aust, Mrs. Sarah (formerly Murray). (*Guide to the Lakes*).... — ..1811
Austin, John. Jurist. (*Province of Jurisprudence*)..... 1797..1860
Austria, Caroline Augusta, Dowager Empress of..... 1792..1873
Austria, Sophia Frederica Dorothea Wilhelmina, Archduchess of..... 1805..1872
Autran, Joseph. French Poet..... 1813..1877
Avempace, or Ibn-Bājja. Spanish Arabian Philosopher..... — .1138?
Avenbrugger, or Auenbrugger, *which see*..... 1722..1809
Avenzohar, Abumeron. Arabian Physician in Spain..... 1072?..1162
Avenzohar, Alhafid, son. Arabian Physician in Spain..... 1114..1199
Avery, Benjamin P. American Editor and Diplomatist..... 1828..1875
Avezac-Macaya, Marie Armand Pascal de. Fr. Geographer, 1799..1875
Avicebron, or Solomon ben Gebirol. Jewish Philosopher... fl. 11th c.
Ayer, James C. American Chemist and Capitalist..... — ..1878
Ayre, Rev. John. Biblical Scholar and Author..... 1801..1869
Ayrton, William. Writer on Music..... 1777..1858
Azais, Peter Hyacinth. French Philosopher..... 1766..1845
Azeglio, Massimo Taparella, Marquis d'. Italian Statesman, Author, and Artist..... 1801..1866

## B.

Baasha. King of Israel (B. C. 953–930)..... — B.C. 930
Babbage, Charles, LL. D., F. R. S. English Mathematician, inventor of Calculating Machine..... 1792..1871
Babcock, Rufus. American Clergyman and Author..... 1798..1875
Babinet, Jacques. French Physicist and Astronomer..... 1794..1872
Babington, Benjamin Guy. English Medical Writer..... 1794..1866
Bache, Alexander Dallas. American Physicist and Author.. 1806..1867
Bache, Franklin, M. D. American Physician, Savant, and Author..... 1792..1864
Bache, Hartman. Brevet Brigadier General U. S. A..... 1797..1872
Back, Sir George. English Admiral, a distinguished Arctic Navigator..... 1796..1878

BORN. DIED.

**Bacon**, David W., D. D. Roman Catholic Bishop..... 1814..1874
**Bacon**, Ezekiel, LL. D. American Jurist and Politician..... 1776..1870
**Bacon**, Francis, Viscount St. Albans. Life by Anon. 1626 (reprinted in Harl. Misc.); Rawley, 1657; R. Stephens, 1736; Mallet, 1740 (also in German and French); Pouillot, 1755; Anon., 1787; Bertin, 1788; Courtier, 1803; Montagu, 1834; Ozanam, 1835; Macaulay, 1837; Wilhelmy, 1843; Craik, 1846; Sortain, 1851; M. Napier, 1853; Campbell, 1853; Rémusat, 1857; Spedding, 1861; Dixon, 1861, enlarged, 1862..... 1561..1626
**Bacon**, Joel S. Am. Clerg., Prof., and Col. President..... 1801..1869
**Bacon**, Nathaniel. Insurrectionary Leader in Virginia (1675–77)..... 1630..1677
**Badger**, Milton. American Clergyman and Writer..... 1800..1873
**Baer**, Carl Ernst von. Russian Naturalist..... 1792..1876
**Bagby**, Arthur P. American Statesman..... 1794..1858
**Bagehot**, Walter. English Journalist and Writer on Political Economy..... 1826..1877
**Bagot**, Richard. Bishop of Oxford..... 1782..1854
**Bailey**, Gamaliel. American Journalist..... 1807..1859
**Bailey**, Jacob Whitman. Am. Microscopist and Algologist.. 1806..1857
**Bailey**, Joseph. Brigadier-General, U. S. Vols..... — ..1867
**Bailey**, Samuel. English Writer. (*Essays on the Formation of Opinions.*)..... 1792..1870
**Baily**, Edward Hodges, R. A. English Sculptor..... 1788..1867
**Baines**, Thomas. British Painter and Explorer..... — ..1875
**Baird**, Thomas D. American Professor..... 1819..1873
**Baker**, William H. American Artist..... — ..1875
**Bakewell**, J. C. English Journalist, Physicist, Author..... 1800..1869
**Bakunin**, Michael. Russian Political Agitator..... 1814..1876
**Balard**, Antoine Jérôme. French Chemist..... 1802..1876
**Baldasseroni**, Giovanni. Italian Statesman..... 1790..1876
**Balfe**, Michael William. Violinist and Composer..... 1808..1870
**Balfour**, Rev. Walter. Universalist Writer..... 1776..1852
**Ball**, Dyer, M. D. American Clergyman and Missionary..... 1796..1866
**Ballantine**, James. British Author..... 1808..1877
**Ballou**, Hosea, 2d, D. D. Divine and Writer..... — ..1861
**Balthazar**, Casimir Victor Alexandre de. French Artist..... 1809..1875
**Bamford**, Samuel. English Author..... 1788..1872
**Bandel**, Joseph Ernst von. German Sculptor..... 1800..1876
**Bangs**, Nathan, D. D. Methodist Writer..... 1788..1862
**Baraguay D'Hilliers**, Achille. Marshal of France..... 1795..1878
**Barante**, Aimable Guillaume Prosper Brugière, Baron. French Historian and Diplomatist..... 1782..1866
**Barham**, Thomas Foster. English Scholar, Author and Physicist..... 1794..1869
**Barili**, Antonio. Italian Composer..... 1824..1876
**Barker**, James N. American Writer..... — ..1858
**Barker**, Jacob. American Banker and Lawyer..... 1779..1871
**Barksdale**, William. "Confederate" General..... 1821..1863
**Barnard**, Charlotte A. *Claribel.* English Musical Composer, — ..1869

| | BORN. | DIED. |
|---|---|---|
| **Barnes**, Rev. Albert. American Scholar and Author | 1798 | 1870 |
| **Barnes**, James. Major-General U. S. Volunteers. | 1809? | 1869 |
| **Barni**, Jules Romain. French Scholar | 1818 | 1878 |
| **Baroche**, Pierre Jules. French Advocate and Politician | 1802 | 1870 |
| **Barras**, Charles M. American Dramatic Author | 1826 | 1873 |
| **Barriere**, Théodore. French Dramatic Author | 1823 | 1877 |
| **Barringer**, Daniel Moreau. American Politician and Dipl | 1807 | 1873 |
| **Barron**, James. American Naval Officer | — | 1851 |
| **Barry**, William Farquhar. American General | 1818 | 1879 |
| **Barstow**, Zedekiah Smith. Am. Clergyman and Educator | 1790 | 1873 |
| **Bartlett**, William Francis. American General | 1840 | 1876 |
| **Barye**, Antoine Louis. French Sculptor | 1795 | 1875 |
| **Bascom**, Henry Bidleman, D. D. Am. Divine and Writer | 1796 | 1850 |
| **Bassini**, Carlo. Musical Composer and Writer | 1812 | 1870 |
| **Bastide**, Jules. French Political and Historical Writer | 1800 | 1879 |
| **Bastianini** Giovanni. Italian Sculptor | — | 1868 |
| **Batthyanyi**, Cassimir, Count. Hungarian Statesman | 1807 | 1854 |
| **Battle**, William Horn. American Jurist | 1802 | 1879 |
| **Baudissin**, Wolf Heinrich Friedrich Karl. Ger. Author | 1789 | 1878 |
| **Bauer**, Bruno. German Theologian and Metaphysician | — | 1809 |
| **Bauer**, Clara. *Karl Detlef.* German Authoress | 1836 | 1876 |
| **Bauer**, Wilhelm. German Inventor | 1822 | 1875 |
| **Baumstark**, Anton. German Philologist | 1800 | 1876 |
| **Baur**, Ferdinand Christian. German Church Historian | — | 1791 |
| **Baur**, George Lawrence. German Theologian. (*Hermeneutica Sacra*) | 1755 | 1806 |
| **Bavaria**, Ludwig, Carl August (Louis I.), Ex-King of | 1786 | 1868 |
| **Bayard**, George D. American General | — | 1862 |
| **Bayer**, August von. German Painter | 1803 | 1875 |
| **Bayer**, Hieronimus Johan Paul von. German Jurist | 1792 | 1876 |
| **Bayley**, James Roosevelt. American Archbishop | 1814 | 1877 |
| **Baxter**, George. Inventor of Oil-color Printing | 1805 | 1867 |
| **Beach**, Moses Yale. American Publisher and Editor | 1800 | 1868 |
| **Beal**, Abraham. Reformer and Philanthopist | 1803? | 1872 |
| **Beaufort**, Henry Somerset, Duke of. Soldier in Peninsular War | 1792 | 1854 |
| **Beck**, Charles, Ph. D. Prof. of Latin in Harvard College | 1788 | 1866 |
| **Beck**, Charles. American Scholar and Writer | 1798. | 1866 |
| **Beck**, John Brodhead. American Physician | 1794 | 1851 |
| **Beck**, Lewis C. American Naturalist | 1800 | 1853 |
| **Beck**, Theodore Romeyn, M. D. American Medical Writer | 1791 | 1855 |
| **Beck**, Johan Heinrich. German Painter | 1789 | 1875 |
| **Beck**, Prof. Tobias von. German Theologian | 1804 | 1878 |
| **Becker**, Karl Ferdinand. German Musician and Composer | 1804 | 1877 |
| **Beckwith**, John Charles. Major-General | 1790 | 1862 |
| **Becquerel**, Antoine César. French Physicist | 1788 | 1878 |
| **Bedel**, John. American General | 1823 | 1875 |
| **Bedford**, Gunning S. Amer. Medical Professor | 1806 | 1870 |
| **Bee**, Barnard E. "Confederate" General | — | 1861 |
| **Beecher**, Catherine Esther. American Authoress | 1800 | 1878 |
| **Beerski**, Count John de. Russian Army Officer and Painter | 1798? | 1868 |

| | BORN. | DIED. |
|---|---|---|
| **Beke, Charles Tilstone.** Eng. Geologist, Geog., Ethnologist. | 1800.. | 1874 |
| **Bekker, Ernst Immanuel.** German Philologist. | 1785.. | 1871 |
| **Belcher, Sir Edward.** English Admiral and Author. | 1799.. | 1877 |
| **Bell, Henry H.** Rear Admiral, U. S. N. | 1808 ?. | 1868 |
| **Bell, John.** American Statesman. | 1797.. | 1869 |
| **Bell, Robert.** English Writer. | 1800.. | 1867 |
| **Bell, Samuel Dana, LL. D.** American Jurist. | 1798.. | 1868 |
| **Belloguet, Baron Roget de.** Archæologist and Author. | — .. | 1872 |
| **Benavides.** Chilian General. | — .. | 1823 |
| **Benedek, Ludwig von.** Austrian General. | 1804.. | 1871 |
| **Benedix, Julien Roderic.** German Poet and Dramatist. | 1811.. | 1873 |
| **Benjamin, Park.** American Editor and Poet. | 1809.. | 1864 |
| **Bennett, William.** Bishop of Cloyne. Scholar and Archæol. | 1745.. | 1820 |
| **Bennett, James Gordon.** American Journalist. | 1795.. | 1872 |
| **Bennett, Milo Lyman.** American Jurist and Writer. | 1790.. | 1868 |
| **Bennett, Sir William Sterndale.** Eng. Composer and Pianist. | 1816.. | 1875 |
| **Bentley, Richard.** English Publisher. | 1794.. | 1871 |
| **Bentley, Robert.** English Botanist and Author. | 1821.. | 1871 |
| **Bentley, Samuel.** English Publisher and Editor. (*Excerpta Historica.*) | 1785.. | 1868 |
| **Benton, Nathaniel S.** American Politician. | 1792.. | 1869 |
| **Benton, Thomas Hart.** American Statesman. | 1782.. | 1858 |
| **Berardi, Guiseppe.** Italian Cardinal-priest. | 1810.. | 1878 |
| **Berbrugger, Louis Adrien.** French Philologist and Author. | 1801.. | 1869 |
| **Berdelle, Johann Baptiste.** German Painter. | 1811.. | 1876 |
| **Berg, Joseph Frederick, D. D.** American Theol. and Author. | 1812.. | 1871 |
| **Bergenroth, Gustave H.** Prussian Historic Scholar. | — .. | 1869 |
| **Bergmann, Karl.** German-American Musician. | 1821.. | 1876 |
| **Berlioz, Louis Hector.** French Musician and Composer. | 1803.. | 1869 |
| **Bernard, Claude.** French Physiologist. | 1813.. | 1878 |
| **Bernard, William Bayle.** Dramatist. | 1808.. | 1875 |
| **Bernhardy, Gottfried.** German Philologist. | 1800.. | 1875 |
| **Berri, Marie Caroline Ferdinande de Bourbon, Duchess de.** | 1798.. | 1870 |
| **Berrien, John Macpherson.** Amer. Lawyer and Statesman. | 1781.. | 1856 |
| **Berry, Miss Mary.** Friend of Horace Walpole. | 1763 ?. | 1852 |
| **Berryer, Pierre Antoine.** French Politician and Author. | 1790.. | 1868 |
| **Berthold, Arnold Adolphus.** German Naturalist. | 1803.. | 1861 |
| **Bertin, Louise Angélique.** French Artist and Poetess. | 1805.. | 1877 |
| **Bertini, Henri.** French Pianist and Composer. | 1798.. | 1876 |
| **Berwick, William.** English Historical Painter. | 1796.. | 1866 |
| **Beta, Heinrich.** German Novelist. | — .. | 1876 |
| **Bethmann-Hollweg, Moritz August von.** German Jurist. | 1795.. | 1877 |
| **Betts, Samuel R., LL. D.** American Jurist. | 1787.. | 1868 |
| **Bibb, George M.** American Jurist and Statesman. | 1772.. | 1859 |
| **Bibra, Ernst von, Baron.** Bavarian Naturalist. | 1806.. | 1878 |
| **Biddlecomb, Sir George.** British Naval Officer. | 1807.. | 1878 |
| **Biel, Gabriel.** German Theologian and Philosopher. | — .. | 1495 |
| **Bienville, John Baptist Lemoine, Sieur de.** Second Colonial Governor of Louisiana. | 1680.. | 1768 |
| **Bigelow, George Tyler.** American Jurist. | 1810.. | 1878 |
| **Bigelow, Jacob.** American Physician. | 1787.. | 1879 |

| | BORN. | DIED. |
|---|---|---|
| **Bigsby, Robert.** English Historian and Archæologist | 1806 | 1873 |
| **Binney, Horace.** American Lawyer | 1780 | 1875 |
| **Bird, Rev. Charles Smith.** Controversialist | 1795 | 1862 |
| **Bird, Robert M., M. D.** American Writer | 1803 | 1854 |
| **Birney, David Bell.** American General | 1825 | 1864 |
| **Birt, John Baptist.** French Savant | 1774 | 1862 |
| **Bixby, Thomas.** Classical Scholar and Book Collector | 1799 | 1863 |
| **Bizet, Georges.** French Composer | 1840 | 1875 |
| **Blaauw, William Henry.** English Antiquarian. (*The Barons' War.*) | 1793 | 1870 |
| **Black, Adam, M. P.** British Publisher and Politician | 1784 | 1874 |
| **Black, David.** American Clergyman, Historian, Author | 1779 | 1874 |
| **Blackford, Isaac.** American Jurist and Law Writer | — | 1859 |
| **Blackwood, John.** British Publisher | 1818 | 1879 |
| **Blagden, Miss Isa.** English Novelist | — | 1873 |
| **Blair, Francis Preston.** American Journalist | 1791 | 1876 |
| **Blair, Francis Preston, Jr.** Amer. Journalist and Politician | 1821 | 1875 |
| **Blake, Rev. John Lauris, D. D.** Writer. (*Biogr. Dict.*) | 1788 | 1857 |
| **Blake, William Hume, LL. D.** Canadian Jurist | — | 1870 |
| **Blanchard, Joshua P.** American Philanthropist | 1782 | 1868 |
| **Blanchard, Thomas.** American Mechanic and Inventor | 1788 | 1864 |
| **Blasius, Ernst.** German Physician | 1802 | 1875 |
| **Blatchford, Richard M.** American Diplomatist | 1798. | 1875 |
| **Blau, Dr. Otto.** German Archæologist | — | 1879 |
| **Bleek, Wilhelm Heinrich Emmanuel.** Philologist | 1827 | 1875 |
| **Blenker, Louis.** American General | 1812 | 1863 |
| **Blunt, Edmund.** American Hydrographer | 1799 | 1866 |
| **Blunt, George W.** American Marine Surveyor | 1802 | 1878 |
| **Bockh, August.** German Classical Antiquary and Philologist | 1785 | 1867 |
| **Bodisco, Alexander.** Russian Diplomatist | 1779 | 1854 |
| **Bogardus, James.** American Scientist and Inventor | 1800 | 1874 |
| **Bogle, James.** American Painter | 1817 | 1873 |
| **Bohlen, Henry.** American General | — | 1862 |
| **Boileau, Sir John Peter, Bart.** Physicist and Antiquarian | 1795 | 1869 |
| **Bonaparte, Mrs. Elizabeth Patterson** | 1785 | 1879 |
| **Bonaparte, Napoleon Eugène Louis Jean Joseph, Prince Imperial of France** | 1856 | 1879 |
| **Bonaparte, Jerome Napoleon (Patterson)** | 1805 | 1870 |
| **Bondi, Rev. J.** Hebrew Rabbi and Editor | 1804 | 1874 |
| **Boner, Charles.** English Author, Journalist, Translator | — | 1870 |
| **Bonomi, Joseph.** English Archæologist | 1796 | 1878 |
| **Boole, George, Prof.** Mathematician and Metaphysician | 1819? | 1864 |
| **Booth, James.** English Clergyman and Author | 1814 | 1878 |
| **Bopp, Franz.** German Philologist | 1791 | 1867 |
| **Borden, Gail.** American Inventor and Philanthropist | 1801 | 1874 |
| **Borland, Solon.** "Confederate" General | — | 1864 |
| **Bosio, Astyanax Scevola.** French Sculptor | 1798? | 1876 |
| **Bosworth, Joseph.** Anglo-Saxon Scholar | 1790 | 1876 |
| **Bottiger, Karl Wilhelm.** Swedish Poet | 1807 | 1878 |
| **Botts, John Minor.** American Politician | 1802 | 1869 |
| **Bouilhet, Louis.** French Author and Poet | 1824 | 1869 |

| | BORN. | DIED. |
|---|---|---|
| **Bourbon,** Enrique Marie Ferdinand, Prince de | 1823.. | 1870 |
| **Bourbon,** Marie Amélie de. Widow of Louis Philippe | 1782.. | 1866 |
| **Bourdon,** Peter Louis Mary. French Mathematician | 1799.. | 1854 |
| **Boutaric,** Edgar Paul. French Historian | 1829.. | 1878 |
| **Boutell,** Charles. Brit. Archæologist. (*English Heraldry.*) | — .. | 1877 |
| **Bouton,** Nathaniel. American Congregational Clergyman | 1799.. | 1878 |
| **Bowen,** John S. "Confederate" General | — .. | 1863 |
| **Bowers,** George Vining. American Actor | 1835.. | 1878 |
| **Bowes,** Andrew Robinson Stoney, M. P. Husband of Countess of Strathmore. Life by Jesse Foot | 1745.. | 1810 |
| **Bowles,** Sir George. British General | 1787.. | 1876 |
| **Bowles,** Samuel. American Journalist | 1826.. | 1878 |
| **Bowring,** Sir John. Poet, Philologist, Publicist | 1792.. | 1872 |
| **Boyd,** James. Classical and General Editor | 1795.. | 1856 |
| **Brace,** John Pierce. American Teacher and Journalist | 1793.. | 1872 |
| **Brachvogel,** Albert Emil. German Novelist and Dramatist | 1824.. | 1878 |
| **Brackenbridge,** Henry M. Amer. Polit., Diplom., Author | 1786.. | 1871 |
| **Bradbury,** William B. Musical Teacher and Composer | 1816.. | 1868 |
| **Bradford,** Alexander Warfield. Amer. Jurist and Editor | 1815.. | 1867 |
| **Bradley,** Warren Ives. *Glance Gaylord.* American Author | 1847.. | 1868 |
| **Brady,** Hugh. American Military Officer | 1768.. | 1851 |
| **Brady,** James Topham. American Advocate and Politician | 1815.. | 1869 |
| **Bragg,** Braxton. "Confederate" General | 1815?. | 1876 |
| **Brainerd,** Thomas. American Clergyman and Author | 1804.. | 1866 |
| **Brancaleone,** Dandolo. Senator of Rome | — .. | 1258 |
| **Branch,** Lawrence O'Brien. "Confederate" General | 1820.. | 1862 |
| **Brande,** William Thomas. Eng. Physician, Chemist, Author. | 1786.. | 1866 |
| **Brandis,** Christian Auguste. German Philosopher | 1790.. | 1867 |
| **Brascassat,** Jaques Raymond. French Painter | 1805.. | 1867 |
| **Braun,** Alexander. German Botanist | 1805.. | 1877 |
| **Bravo,** Nicholas. Mexican General and Statesman | 1792.. | 1854 |
| **Braybrooke,** Richard Neville Griffin, Third Lord. Antiquary. (*History of Audley End; Evelyn's Memoir.*) | 1783.. | 1858 |
| **Breckenridge,** John Cabell. American Statesman | 1821.. | 1875 |
| **Breckinridge,** Robert Jefferson. Amer. Clerg., Prof., Author. | 1800.. | 1871 |
| **Breese,** Sidney. American Jurist | 1800.. | 1878 |
| **Bremer,** Miss Frederika. Swedish Novelist | 1802.. | 1865 |
| **Brewer,** John Sherren. Eng. Prof., Antiquarian, Author | 1810.. | 1879 |
| **Brewster,** Sir David, K. H. British Physicist and Author | 1781.. | 1868 |
| **Briggs,** Charles Frederick. American Writer | 1804.. | 1877 |
| **Bright,** Edmund, of Malden. Noted for weight, 616 lbs. | 1721. | 1790 |
| **Brion,** Gustave. French *genre* Painter | 1824.. | 1877 |
| **Briot,** Peter Francis, of Besançon. Phys., Medical Writer | 1773?. | 1826 |
| **Briscoe,** Joseph C. Brevet-General, U. S. A | 1834.. | 1869 |
| **Bristed,** Charles Astor. American Author | 1820.. | 1874 |
| **Bristow,** Edmund. British Painter | 1786.. | 1876 |
| **Brockedon,** William. Author, Artist and Inventor | 1787.. | 1854 |
| **Brockett,** John Trotter. Antiquary | 1788.. | 1842 |
| **Brockhaus,** Hermann. German Linguistic Scholar | 1806.. | 1877 |
| **Broderick,** David Colbreth. American Politician | 1819.. | 1859 |
| **Brodhead,** John Romeyn. Amer. Hist. and Diplomatist | 1814.. | 1873 |

| | BORN. | DIED. |
|---|---|---|
| **Brodie,** Alexander. Scottish Sculptor | 1831 | 1867 |
| **Brodie,** George. Scottish Historical Writer | 1786. | 1867 |
| **Brofferio,** M. Angelo. Italian Statesman, Poet, Historian | 1803 | 1866 |
| **Broglie,** Achille Charles Séance Victor, Duc de. Statesman and Publicist | 1785 | 1870 |
| **Bromley,** Valentine Walter. British Artist | 1848 | 1877 |
| **Bromme,** Traugott. German Geographer | 1771? | 1865 |
| **Brongniart,** Adolph Théodore. French Botanist | 1801 | 1876 |
| **Brooke,** Mrs. Avonia Jones. American Actress | 1838 | 1867 |
| **Brooke,** George M. American General | — | 1851 |
| **Brooke,** Sir James. English Knight-errant, Philanthropist, and Governor | 1803 | 1868 |
| **Brooke,** William F. H. Major-General U. S. Vols | — | 1870 |
| **Brooks,** James. American Journalist and Politician | 1810 | 1873 |
| **Brooks,** Preston S. American Politician | 1819 | 1857 |
| **Brough,** William. English Comedian and Writer | 1826 | 1870 |
| **Brougham,** Henry, Lord Brougham and Vaux. British Statesman and Reformer | 1778 | 1868 |
| **Broughton,** Sir John Cam Hobhouse. English Statesman | 1786 | 1869 |
| **Brown,** David Paul. American Lawyer and Author | 1795 | 1872 |
| **Brown,** J. C. Scottish Landscape Painter | 1805 | 1867 |
| **Brown,** Sir George. General; distinguished in Crimea | 1790 | 1865 |
| **Brown,** Goold. American Grammarian | 1791 | 1857 |
| **Brown,** Dr. Samuel, of Edinb. Chemical Theorist; Poet | 1817 | 1856 |
| **Brown,** John Newton, D. D. Baptist Clergyman and Author | 1803 | 1868 |
| **Brown,** John Porter. Amer. Diplomatist and Orientalist | 1814 | 1872 |
| **Brown,** Sir William. Merchant and Philanthropist | 1784 | 1864 |
| **Browne,** Charles F. *Artemus Ward.* Amer. Humorist | 1834? | 1867 |
| **Brownell,** Rt. Rev. Thomas Church. American Theologian and Educator | 1779 | 1865 |
| **Brownell,** Henry Howard. American Author and Soldier | 1820 | 1872 |
| **Brownlow,** William Gannaway. American Clergyman, Journalist, Politician | 1805 | 1877 |
| **Brownson,** Orestes Augustus, LL. D. American Author | 1803 | 1876 |
| **Bruat,** Armand Joseph. French Admiral | 1796 | 1855 |
| **Bruce,** Archibald, M. D. Amer. Physician and Mineralogist | 1777 | 1818 |
| **Bruce,** Sir Frederick William Adolphus. Eng. Diplomatist | 1814 | 1867 |
| **Bruce,** George. American Type Founder | 1781 | 1866 |
| **Bruce,** John. English Journalist and Antiquarian | 1802 | 1869 |
| **Bruck,** Baron de. Austrian Financier | 1799 | 1860 |
| **Brunnow,** Baron Philip de. Rus. Statesman and Diplomatist | 1797 | 1875 |
| **Brunswick,** Charles Frederick Augustus William, ex-Duke of. | 1804 | 1873 |
| **Bryant,** William Cullen. American Poet and Journalist | 1794 | 1878 |
| **Buchan,** Peter. Scottish Antiquary | — | 1854 |
| **Buchanan,** Franklin. "Confederate" Admiral | 1800 | 1874 |
| **Buchanan,** James. President of U. S., 1857–1861 | 1791 | 1868 |
| **Buchanan,** John, D. D. Am. Luth. Clerg., Naturalist, Author. | 1790 | 1874 |
| **Buchanan,** McKean. American Actor | 1823 | 1872 |
| **Buchanan,** Robert C. Brevet Major-General, U. S. A | — | 1878 |
| **Buchanan,** Dr. Robert. Scottish Clergyman | 1800? | 1875 |
| **Buchholtz,** Reinhold. German Naturalist | 1836 | 1876 |

| | BORN. | DIED. |
|---|---|---|
| **Buckhout**, Isaac Craig. American Civil Engineer | 1831 | 1874 |
| **Buckingham**, Joseph Tinker. American Journalist | 1799 | 1861 |
| **Budington**, William Ives, D. D. Amer. Congl. Clergyman | 1815 | 1879 |
| **Buell**, Rufus F. Amer. Missionary to Greece | 1813 | 1866 |
| **Buford**, John. American Cavalry Officer | 1825 | 1863 |
| **Bulfinch**, Thomas. Amer. Author. (*Age of Chivalry*) | 1797 | 1867 |
| **Bulgaris**, Dimitri. Greek Statesman | 1801 | 1878 |
| **Bullions**, Rev. Peter, D. D. American Educator and Author | 1791 | 1864 |
| **Buloz**, François. Founder of the *Revue des Deux Mondes* | 1803 | 1877 |
| **Bulwer**, William Henry Lytton Earle, Baron Dalling. English Diplomatist and Author | 1804 | 1872 |
| **Burdach**, Ernst. German Physiologist | 1801 | 1876 |
| **Burden**, Henry. American Inventor | 1791 | 1871 |
| **Burgeoise**, Sir Francis, R. A. Painter. Founder of Dulwich Gallery | — | 1811 |
| **Burges**, Tristam. American Statesman | 1770 | 1853 |
| **Burgess**, George. Protestant Episcopal Bishop. Poet | 1809. | 1866 |
| **Burgoyne**, Sir John Fox. English Military Officer | 1782 | 1871 |
| **Burleigh**, Charles C. Amer. Abolitionist and Preacher | 1810 | 1878 |
| **Burleigh**, William Henry. Amer. Jour., Reformer and Poet. | 1812 | 1871 |
| **Burlingame**, Anson. Amer. Statesman and Diplomatist | 1822 | 1870 |
| **Burnap**, Rev. George Washington. Amer. Theol. Writer | 1802 | 1859 |
| **Burnet**, John. English Engraver and Author | 1784 | 1868 |
| **Burnett**, Fanny. English Translator and Authoress | 1843 | 1875 |
| **Burnham**, Samuel. American Journalist and Hist. Writer | 1833 | 1873 |
| **Burns**, Jabez. English Baptist Minister | 1805 | 1876 |
| **Burns**, John. "Hero of Gettysburg" | 1794 | 1872 |
| **Burns**, Col. William N. Son of the Poet | 1792 | 1872 |
| **Burrill**, Alexander M. American Lawyer and Legal Writer | 1807 | 1869 |
| **Burritt**, Elihu. "The Learned Blacksmith" | 1811 | 1879 |
| **Burton**, Henry S. Brevet Brigadier-General, U. S. A | 1818 | 1869 |
| **Burton**, William Evans. Comedian. (*Cyclopædia of Wit and Humor*) | 1804 | 1860 |
| **Bury**, Lady Charlotte. Novelist | 1775 | 1861 |
| **Bush**, George. American Theologian | 1796 | 1859 |
| **Bushnell**, Horace, D. D. American Clergyman | 1802 | 1876 |
| **Buss**, Franz Joseph von. German Jurist and Writer | 1803 | 1878 |
| **Bustamente**, Anastasius. Mexican Soldier and Statesman | 1782 | 1851 |
| **Bute**, John Stuart, Fourth Earl and First Marquess of | 1744 | 1814 |
| **Butler**, Andrew Pickens. Amer. Lawyer and Politician | 1796. | 1857 |
| **Butler**, Benjamin F. American Lawyer and Statesman | — | 1858 |
| **Butt**, Isaac. Irish Lawyer and Statesman | 1813 | 1879 |
| **Buxton**, Charles, M. P. English Critic and Author | 1823 | 1871 |
| **Byron**, George Anson. Seventh Lord. Admiral | 1789 | 1868 |
| **Byron**, George Anson. Eighth Lord | 1818 | 1870 |
| **Byron**, Lady Noel. Wife of Lord Byron | 1793, | 1869 |

# C.

| | BORN. | DIED. |
|---|---|---|
| **Caballero, Fernan.** (Cecilia de Arrom.) Spanish Novelist... | 1797.. | 1876 |
| **Cabrera, Don Ramon.** Carlist General..... | 1810.. | 1876 |
| **Cairnes, Prof.** Eng. Writer on Soc. and Polit. Questions.... | 1828.. | 1875 |
| **Caldwell, Charles,** M. D. Medical and Miscel. Writer..... | 1772. | 1853 |
| **Caldwell, Charles H. B.** American Commodore..... | 1838.. | 1877 |
| **Calhoun, George Albion.** Am. Clerg. and Polemic Writer... | 1789.. | 1867 |
| **Calvin, John.** Life by Beza, 1564 (also in Latin and German); Bolsec, 1572 (also in German); J. P. Masson, 1598; Ziegenbein, 1789-90; Tischer, 1794; Mackenzie, 1809; Henry, 1835, enlarged and rewritten, 1846 (also in English and Dutch); Audin, 1840 (also in German and Italian); Haag, 1840; Guizot, 1844; Dyer, 1849; Strähelin, 1863; Bungener..... | 1509.. | 1564 |
| **Cameroni, Angelo.** Italian Sculptor..... | — .. | 1867 |
| **Cameron, Dr. Archibald.** Scottish Jacobite; executed..... | 1698.. | 1753 |
| **Cameron, James, of Lochiel, brother.** Scottish Jacobite..... | 1696.. | 1758 |
| **Campbell, Alexander.** Founder of the "Disciples of Christ." | 1786.. | 1866 |
| **Campbell, John.** English Clergyman and Editor..... | 1794.. | 1867 |
| **Campbell, Sherwood Coan.** American Singer..... | 1830?.. | 1874 |
| **Canby, Edward Richard Spriggs.** Brevet. Maj. Gen. U. S. A. | 1819.. | 1873 |
| **Candlish, Rev. Robert Smith.** Leader of the Free Church of Scotland..... | 1807.. | 1873 |
| **Canterbury, Charles Thomas Longley,** D. D., Archbishop of, | 1794.. | 1868 |
| **Capendu, Ernest.** French Novelist and Dramatist..... | 1828.. | 1868 |
| **Carafa, Michael Henry.** Italian Musician and Composer..... | 1785.. | 1872 |
| **Carbuccia, Gen.** French Archæologist..... | — .. | 1854 |
| **Cardigan, James Thomas Brudenell.** English Nobleman and Army Officer..... | 1797.. | 1868 |
| **Carey, Henry Charles.** American Political Economist..... | 1793.. | 1879 |
| **Carey, John L.** American Political Economist..... | — .. | 1852 |
| **Carleton, James H.** Brevet Major-General, U. S. A..... | 1814.. | 1873 |
| **Carleton, William.** Irish Novelist..... | 1798.. | 1869 |
| **Carlisle, Richard Risley,** *Professor Risley.* Athlete..... | 1814.. | 1874 |
| **Carmiencke, John Hermann.** Am. Landscape Painter..... | 1809.. | 1867 |
| **Carne, Louis Marcein, Count de.** French Publicist..... | 1804.. | 1876 |
| **Carnwath, Robert Dalziel, Sixth Earl of.** Scot. Jacobite... | 1673.. | 1726 |
| **Caroll, Sir William Farebrother.** Naval Officer..... | 1785.. | 1862 |
| **Carot, Jean Baptiste Camille.** French Artist..... | 1796.. | 1875 |
| **Carpeaux, Jean Baptiste.** French Sculptor..... | 1827.. | 1875 |
| **Carpender, Edward W.** American Commodore..... | 1796.. | 1877 |
| **Carruthers, Dr. Robert.** Scotch Editor and Author..... | 1799.. | 1878 |
| **Carson, Christopher.** Brevet Brig.-Gen., U. S. A. "Kit."... | 1809.. | 1868 |
| **Cartwright, Rev. Edmund,** F. S. A. Topographer. (*Sussex.*). | 1777.. | 1833 |
| **Cartwright, Peter.** American Methodist Preacher..... | 1785.. | 1872 |
| **Cary, Alice.** American Poetess and Prose Writer..... | 1820.. | 1871 |
| **Cary, Phœbe.** Sister of Alice. (*Poems of Faith, Hope and Love.*)..... | 1825.. | 1871 |

BORN. DIED.

Cass, Lewis. American Statesman..... 1782..1866
Cassidy, William. American Journalist..... 1814..1873
Cassin, John. American Naturalist..... 1813..1869
Castilho, Antonio Feliciano, Viscount. Portuguese Poet.... 1800..1875
Castilla, Don Raymon. South American Statesman ..... 1799..1867
Catlin, George. American Artist and Author..... ..... 1796..1872
Cattermole, George. English Water Color Artist..... 1800..1868
Caulfield, James, Earl of Charlemont. Life by Francis Hardy, 1810..... 1728..1799
Caumont, Arcisse de. Archæologist and Author..... 1802..1873
Cavada, Frederico. Cuban Patriot..... 1832..1871
Cavendish, Elizabeth Hardwicke, Lady..... 1519..1608
Cavendish, George. Usher and Biographer of Wolsey.....1500?..1562?
Caventon, Joseph Bienaimé, French Chemist..... 1795..1877
Cayley, George John. English Poet and Journalist..... 1826..1878
Cerise or Cerisi, Laurent Alexandre Philibert, M. D. Italian Psychologist and Author..... 1809..1869
Cervantes. Spanish Novelist. (*Don Quixote.*) Life by Mayans y Siscar, 1737, Englished by Ozell, 1738; Sarmiento; J. de Iriarte; Montiano y Luyando; J. M. de Flores; V. de Los Rios, 1780; Claris de Florian, 1785? Pellicer, 1778, enlarged 1798; Jarvis, 1801; Merimée, 1806; Fernandez de Navarrete, 1819; Auger, 1825; Filleau Saint-Martin, 1825; Roscoe, 1839; Aribau, 1849; Finlay..... 1547..1616
Cesare, Joseph. Italian Historian..... 1783..1856
Chacomac, Jean. French Astronomer..... 1823..1873
Cham, *nom de plume* of Amédée de Noé. Fr. Caricaturist... 1819..1879
Chambers, David N. Brother of Robert ... ..... 1819..1871
Chambers, George. American Jurist and Author..... 1786..1866
Chambers, Robert, LL. D. British Publisher..... 1802..1871
Champlin, Stephen. American Commodore..... 1789..1870
Champollion, Jean Jacques. French Author, Historian, Publicist..... 1778..1867
Chandler, John G. Brevet Brigadier-General, U. S. A..... 1832?..1873
Chandler, Zachariah. American Senator and Politician..... 1813..1879
Chandos, John Brydges, created Duke of..... 1673..1744
Chang and Eng. Siamese Twins..... 1811..1874
Changarnier, Nicolas Anne Théodule. French General..... 1793..1877
Chapman, Reuben Attwater. American Lawyer..... 1801..1873
Charles, Theodore, Prince of Bavaria..... 1795..1875
Charles, William Louis, Prince of Hesse..... 1809..1877
Charles, Thomas, of Bala. Methodist Minister. Life by Morgan..... 1755..1814
Charlon, John James. Painter..... — ..1854
Chase, Carlton, D. D. Protestant Episcopal Bishop..... 1794..1870
Chase, Salmon Portland. Chief-Justice of Supreme Court of United States..... 1808..1873
Chasles, Victor Euphémion Philarète. French Author..... 1798..1873
Chasseloup-Laubat, Justin Napoleon Samuel Bosper, Marquis de. French Statesman..... 1805..1873

| | BORN. | DIED. |
|---|---|---|
| **Chauvenet, William.** American Mathematician | 1821 | 1870 |
| **Chelins, Maximilian Joseph.** German Surgeon | 1794 | 1876 |
| **Chelmsford, Frederic Thesiger, Baron.** Lord Chancellor | 1794 | 1878 |
| **Chenu, Jean Charles.** French Naturalist | 1808 | 1879 |
| **Chesebro, Caroline.** American Author and Teacher | 1828 ? | 1873 |
| **Chesney, Francis Rawdon.** British Military Officer | 1789 | 1872 |
| **Chetham-Strode, Sir Edward.** Admiral | 1775 | 1862 |
| **Chevalier, Michael.** French Political Economist | 1806 | 1879 |
| **Chickering, Jesse.** American Statistician | 1798 | 1855 |
| **Chickering, Thomas E.** Brevet Brig.-Gen., U. S. Vols | 1824 | 1871 |
| **Childs, Henry Halsey.** American Physician and Professor | 1783 | 1868 |
| **Chorley, Henry Fothergill.** Eng. Composer, Critic, Author | 1802 | 1872 |
| **Christina, Maria.** Dowager Queen of Spain | 1806 | 1878 |
| **Christmas, Rev. Henry.** *Noel Fearn.* English Scholar. (*Universal Mythology.*) | 1811 | 1868 |
| **Christopher I.** King of Denmark | — | 1259 |
| **Christopher II** | 1276 | 1333 |
| **Christopher III.** *Of Bavaria* | — | 1448 |
| **Christy, Henry.** Antiquary | 1810 | 1865 |
| **Chrzanowski, Adalbert.** Polish General | 1789 | 1861 |
| **Chubbuck, Samuel W.** Amer. Inventor and Manufacturer | 1800 | 1875 |
| **Church, Albert E.** American Mathematician and Author | — | 1878 |
| **Church, Sir Richard.** Officer in the Greek Service | 1785 | 1873 |
| **Cibot, François-Barthélemy Michel Edouard.** French Painter. | 1799 | 1877 |
| **Clarendon, George William Frederick Villiers, Earl of** | 1800 | 1870 |
| **Clark, Davis Wesgatt.** Methodist Episcopal Bishop | 1812 | 1871 |
| **Clark, Henry James.** American Scientist | 1828 ? | 1873 |
| **Clark, Sir James, Bart.** English Physician | 1788 | 1870 |
| **Clark, Lewis Gaylord.** American Writer | 1810 | 1873 |
| **Clark, Thomas.** British Artist | — | 1876 |
| **Clarke, Charles Cowden.** British Scholar. (*Concordance to Shakespeare.*) | 1788 | 1877 |
| **Clarke, Edward H.** Amer. Physician. (*Sex in Education*) | 1820 | 1877 |
| **Clarke, Gaylord J.** American Jurist, Journalist, Poet | 1836 | 1870 |
| **Clarke, Nathaniel B.** (Belden.) American Actor | 1808 | 1872 |
| **Clarke, Stephen T.** American Journalist | 1819 | 1869 |
| **Clarke, Walter,** D. D. American Clergyman, Author, Orator | 1812 | 1871 |
| **Classon, Octavius.** German Philologist | 1844 | 1875 |
| **Clauson, Henrik Nikolai.** Danish Statesman and Theologian. | 1793 | 1877 |
| **Clay, Clement Comer.** American Statesman | 1789 | 1866 |
| **Clayton, John, of London.** Dissenting Minister | 1780 ? | 1865 |
| **Cleburne, Patrick R.** "Confederate" General | 1828 | 1864 |
| **Clement, Dr. Knut Jungbohn.** Danish Linguist and Historian. | 1803 | 1873 |
| **Cleveland, Charles Dexter.** American Scholar and Author | 1802 | 1869 |
| **Cleveland, Rev. Charles.** "Father Cleveland" | 1772 | 1872 |
| **Cleveland, Elisha Lord.** American Clergyman | 1806 | 1866 |
| **Cleveland, John Fitch.** American Journalist | 1819 | 1876 |
| **Cobb, Howell.** American Statesman | 1815 | 1868 |
| **Coccia, Carlo.** Italian Musical Composer | 1789 | 1873 |
| **Cochet, Jean Benoit Désiré.** Abbot and Antiquarian | 1812 | 1875 |
| **Cochrane, Clark B.** American Lawyer and Politician | 1815 | 1867 |

| | BORN. | DIED. |
|---|---|---|
| **Cock, Thomas, M. D.** American Med. Writer and Professor.. | 1782.. | 1869 |
| Cocke, Philip St. George. "Confederate" General..... | — .. | 1861 |
| Cockerell, Charles Robert, R. A. Architect..... | 1788.. | 1863 |
| Cockton, Henry. Writer. (*Valentine Vox*)..... | 1808.. | 1853 |
| Coffin, James Henry. American Scientist, Meteorologist..... | 1806.. | 1873 |
| Cogswell, Joseph Green, LL. D. Writer, Professor, and Librarian of Astor Library..... | 1786.. | 1871 |
| Colborne, Sir John, Lord Seaton. Field Marshal. Governor-General of Canada..... | 1779.. | 1863 |
| Colburn, Henry. Publisher..... | — .. | 1855 |
| Colburn, Zerah. American Scientific Writer..... | 1832.. | 1870 |
| Colby, Charles G. American Writer and Editor..... | 1829.. | 1866 |
| Cole, Mrs. Florence Francis. *Florence Stanley.* Am. Actress | — .. | 1872 |
| Coleridge, Sir John Taylor. Lawyer and Writer..... | 1790.. | 1876 |
| Coles, Cowper Phipps. British Naval Officer..... | 1819.. | 1870 |
| Colet, Louis Révoil. French Authoress..... | 1810.. | 1876 |
| Collins, Charles Austin. English Painter and Novelist..... | 1828.. | 1873 |
| Collins, Isaac. Violinist. "English Paganini"..... | 1797.. | 1871 |
| Collins, Mortimer. English Poet and Novelist..... | 1825.. | 1876 |
| Collins, Napoleon. Rear-Admiral, U. S. N..... | 1814.. | 1875 |
| Colver, Rev. Nathaniel. Bap. Clerg., Orator, and Reformer.. | 1794.. | 1870 |
| Colwell, Stephen. Amer. Merchant, Political Economist and Philanthropist..... | 1800.. | 1871 |
| Combe, Harvey Christian, M. P. Politician and Founder of Brewery..... | 1752.. | 1818 |
| Combermere, Sir Stapleton Cotton, Viscount. Field Marshal. | 1772.. | 1865 |
| Comer, Thomas. Actor and Musician..... | 1790.. | 1862 |
| Conant, H. C. American Authoress..... | 1810.. | 1865 |
| Concha, Don Manuel de la. Sp. General and Statesman..... | 1794.. | 1874 |
| Coningsby, Thomas, First Lord. Politician..... | 1650?. | 1729 |
| Conington, John, M. A. Classical Scholar and Author..... | 1825.. | 1869 |
| Conkling, Alfred. American Jurist and Legal Writer..... | 1789.. | 1874 |
| Connel, Sir John. Advocate. (*Law of Scotland on Tithes.*).. | — .. | 1831 |
| Connor, Charles. Comedian..... | — .. | 1826 |
| Conolly, John, M. D. English Psychologist and Author..... | 1795.. | 1866 |
| Conrad, Timothy Abbott. American Geologist. ..... | 1803.. | 1877 |
| Converse, Rev. Amasa. Founder of *Christian Observer*..... | 1795.. | 1872 |
| Conway, Frederick B. American Actor..... | 1819.. | 1874 |
| Conyngham, Francis Nathaniel, Marquis of. Irish Nobleman..... | 1797.. | 1876 |
| Cook, Henry F. "Confederate" General..... | — .. | 1863 |
| Cook, John, D. D. Scottish Professor of Divinity..... | 1771.. | 1824 |
| Cook, Rev. Russell S. American Clergyman..... | 1811.. | 1864 |
| Cooke, Edwin T. Brevet Brigadier-General, U. S. Vols..... | — .. | 1867 |
| Cooke, George Wingrove. Biographer and Historian..... | 1814.. | 1865 |
| Cooke, Henry, D. D. Irish Presb. Clerg. and Author..... | 1788.. | 1868 |
| Cooper, Bransby. Surgeon..... | 1792.. | 1853 |
| Cooper, Thomas Abthorpe. Actor..... | 1776.. | 1849 |
| Cooper, Charles Henry. English Antiquarian Scholar..... | 1808.. | 1866 |
| Cooper, William R. Biblical Archæologist..... | 1843.. | 1878 |
| Copland, James. English Physician and Author..... | 1793.. | 1870 |

| | BORN. | DIED. |
|---|---|---|
| Coquerel, Althanase Laurent Charles. Clergyman, Politician, and Author | 1795 | 1868 |
| Cordova, Filippo. Italian Statesman | 1802? | 1868 |
| Cornelius, Peter von. German Painter | 1789 | 1867 |
| Cornell, Ezra. American Philanthropist | 1807 | 1874 |
| Corney, Bolton. English Author and Editor. (*New Curiosities of Literature.*) | 1783 | 1870 |
| Corning, Erastus. American Manufacturer and Politician | 1794 | 1872 |
| Corot, Jean Baptiste Camille. French Artist | 1796 | 1875 |
| Corssen, Wilhelm P. German Philologist | 1820 | 1875 |
| Cort, Franz de. Belgian Poet | 1834 | 1878 |
| Coste, Jean Jacques Marie Cyprien Victor. Fr. Scientist | 1807 | 1873 |
| Costello, Dudley. Author and Journalist | 1803? | 1865 |
| Costello, Miss Louisa Stewart. Artist and Author. (*The Queen's Prisoner.*) | 1815 | 1870 |
| Coster, Francis. *Malleus Hæreticorum.* Belgian Theol | 1531 | 1691 |
| Cottenham, Charles Christopher Pepys, Earl of. Lord High Chancellor | 1781 | 1851 |
| Cotton, Sir Stapleton, G. C. B., Viscount Combermere. Field Marshal | 1773 | 1865 |
| Courbet, Gustave. French Painter | 1819 | 1877 |
| Cousin, Victor. French Metaphysician. Founder of Eclectic School of Philosophy | 1792 | 1867 |
| Couture, Thomas. French Painter of the Idealistic School | 1815 | 1879 |
| Covode, John. American Politician | 1808 | 1871 |
| Cox, Edward William. English Lawyer and Author | 1809 | 1879 |
| Coxe, Richard Charles, Archdeacon of Lindisfarne. Divine and Poet | 1799 | 1865 |
| Cozzens, Frederick. American Humorist. (*The Sparrowgrass Papers.*) | 1817 | 1869 |
| Crace-Calvert, Frederick, M. D. English Chemist | 1819 | 1873 |
| Cradock, Joseph, F. S. A. (*Literary Memoirs.*) | 1741 or 2. | 1826 |
| Craggs, James. Politician | — | 1720 |
| Craig, Robert H. American Actor | 1842 | 1872 |
| Craik, George Lillie. Scot. Author and Belles-Lettres Writer. | 1798 | 1866 |
| Cranworth, Robert Monsey Rolfe, Lord. Jurist | 1790 | 1868 |
| Craven, Alfred W. American Civil Engineer | — | 1879 |
| Craven, Tunis Augustus Macdonough. American Naval Commander | — | 1864 |
| Crawford, John, F. R. S. Oriental Scholar | 1783 | 1868 |
| Crawford, Nathaniel Macon, D. D. American Scholar and College President | 1811 | 1871 |
| Creasy, Sir Edward Shepherd. Eng. Lawyer and Historian | 1812 | 1878 |
| Crele, Joseph. Oldest Man in America | 1725 | 1866 |
| Cremer, Camille. French General | 1840 | 1876 |
| Creswick, Thomas, R. A. English Painter | 1811 | 1870 |
| Cretineau-Joly, Jacques. French Writer | 1803 | 1875 |
| Crockford, William. Originator of Crockford's Club | 1775? | 1844 |
| Cromartie, George Mackenzie, Earl of. Scottish Jacobite | 1710 | 1759 |
| Crosby, Rev. Alpheus. American Scholar and Professor | 1810 | 1874 |
| Crosby, Sir John. Alderman. Builder of Crosby Place | — | 1475 |

| | BORN. | DIED. |
|---|---|---|
| **Croswell, Edwin.** American Journalist and Politician | 1797 | 1871 |
| **Crowe, Eyre Evans.** Eng. Historian. (*History of France.*) | 1799? | 1868 |
| **Crowe, Rev. Frederick.** Writer | — | 1858 |
| **Crowell, William, D. D.** Clergyman, Journalist and Author | 1806 | 1871 |
| **Croxton, John Thomas.** Brevet Major-General, U. S. Vols | 1837 | 1874 |
| **Cruikshank, George.** English Caricaturist | 1792 | 1878 |
| **Cruveilhier, Jean,** French Physician, Prof., Author | 1791 | 1874 |
| **Cullen, Paul.** Roman Catholic Cardinal | 1803 | 1878 |
| **Cuming, Hugh,** Conchologist | 1791? | 1865 |
| **Cummings, Jeremiah W.** Rom. Cath. Clerg. and Author | 1823 | 1866 |
| **Cummins, Miss Maria S.** American Authoress | 1834? | 1866 |
| **Cunningham,** Rev. Francis, of Harrow. Divine | 1785? | 1863 |
| **Cunningham, Peter.** English Author and Critic | 1816 | 1869 |
| **Curtis, Benjamin Robbins, LL. D.** American Jurist | 1809 | 1874 |
| **Curtis, Samuel R.** Major-General, U. S. Vols | 1807 | 1866 |
| **Curtis,** Dr. Thomas. Editor of *Encyclopædia Metropolitana* and *London Encyclopædia* | 1788 | 1859 |
| **Custs,** Rev. Thomas F. American Professor and Author | 1816 | 1872 |
| **Cushing, Caleb.** American Statesman and Diplomatist | 1800 | 1879 |
| **Cushing, William B.** American Naval Commander | 1844 | 1874 |
| **Cushman, Charlotte Saunders.** American Actress. Life by Emma Stebbins | 1816 | 1876 |
| **Cust,** Sir Edward. British General and Military Writer | 1794 | 1878 |
| **Custer, George A.** American General. Killed by the Sioux | 1839 | 1876 |
| **Cutler, Lysander.** Major-General, U. S. Vols | 1806? | 1866 |
| **Cutting, Francis Brockholst.** American Jurist | 1805 | 1870 |
| **Czermak, Joseph, PH. D.** German Pathologist | — | 1873 |
| **Czermak, Jaroslav,** Bohemian Painter | 1831 | 1878 |

## D.

| | | |
|---|---|---|
| **Dahlgren, John A.** American Rear Admiral | 1810 | 1870 |
| **Dahlgren,** Colonel Ulric. American Military Officer | 1842 | 1864 |
| **Dakin, Thomas Spencer.** American Major-General and Marksman | 1831 | 1878 |
| **Dale,** Rev. Thomas. English Professor, Poet, Writer | 1797 | 1870 |
| **Dallas, E. S.** English Journalist and Author. (*The Gay Science.*) | 1827 | 1879 |
| **Dall' Ongaro, Francisco.** Ital. Poet, Dramatist, Revolutionist | 1808 | 1873 |
| **D'Alton, John.** Irish Historian and Genealogist | 1792 | 1867 |
| **Dana, Richard Henry.** American Poet and Essayist | 1787 | 1879 |
| **Dana, Samuel Luther, M. D.** American Chemist | 1795 | 1868 |
| **Danby, John.** Musical Composer | — | 1798 |
| **Dandolo, Ct. Emilio.** Ital. Patriot, Soldier, and *Litterateur* | — | 1859 |
| **Daniel.** Hebrew Prophet | fl. B. C. | 607–534 |
| **Daniel, William Francis.** Naturalist | 1818? | 1865 |
| **Daniels, John M.** American Editor | — | 1865 |

BORN. DIED.

**Dante degli Alighieri.** Life by Fielfo. MS. until 1828; Vilani, MS. until 1826; Boccaccio, 1544; Panchiatichi, 1576; Bruno Aretino, 1672; Manetti, 1747; Pelli, 1759; Chabanon, 1773; Fabroni, 1803; Cesare, 1811; Petroni, 1816; Orelli, 1822; Gamba, 1825; Blanc, 1834: Fauriel, 1834; Balbo, 1839, and Engl. 1852; Missirini, 1840; Savelli, 1841; Artaud de Montor, 1841; Torri, 1843; Wegele, 1852; Véricour, 1858..... 1265..1321

**Darboy,** Rev. Georges, D. D. Rom. Cath. Prelate and Author. 1813..1871

**Darby,** Prof. John. (*Botany of the Southern States.*)..... 1804..1877

**Dargan,** Edmund Sparon. American Jurist..... 1805..1879

**Darley,** William. American Geographer and Statistician..... 1775..1854

**Darling,** James. London Publisher and Bibliographer. (*Cyclopædia Bibliographica.*)..... 1797..1862

**Dartmouth,** George Legge, First Baron. Admiral..... 1648..1691

**Dartmouth,** George Legge, Earl. Statesman..... 1755..1810

**Daubeny,** Charles. Archdeacon of Sarum. (*Guide to the Church.*)..... 1744..1827

**Daubeny,** Charles Giles Bride. Eng. Physicist and Author.. 1795..1867

**D'Aubigne,** (Merle) Jean Henri. (*History of the Reformation.*) 1794..1872

**Daubigny,** Charles François. French Painter..... 1817..1878

**Daumer,** Georg Friedrich. German Writer and Poet..... 1800..1875

**Daumier,** Henri. French Caricaturist..... 1810..1879

**Davenport,** Edward L. American Actor..... 1816..1877

**Davenport,** N. T. American Actor..... 1831..1867

**David,** Felicien César. French Composer..... 1810..1876

**Davies,** Charles. American Mathematician..... 1798..1876

**Davies,** Thomas Stephens. Mathematician..... 1794 ?..1851

**Davis,** Charles Henry. American Naval Officer and Writer... 1807..1877

**Davis,** Edward. English Painter..... 1833..1867

**Davis,** Hasbrouck. Brigadier-General, U. S. Vols..... — ..1870

**Davison,** John, B. D. Theol. (*Discourses on Prophecy.*)..... 1777..1834

**Davy,** John, M. D., F. R. S. Physicist and Author..... 1790..1868

**Dawes,** Rev. William Rutter, F. R. S. English Astronomer.. 1800..1868

**Dawson,** Henry. English Landscape Painter..... 1811..1878

**Day,** Jeremiah, D. D. American Clerg. and Col. President.... 1773..1867

**Deak,** Francis. Hungarian Patriot..... 1803..1876

**Dean,** Amos, LL. D. American Jurist and Author..... 1803..1868

**Dearborn,** Henry Alexander Scammell. American Writer... 1783..1851

**De Bar,** Benedict. American Actor..... 1812..1877

**De Bow,** James Dunwoody Brownson. Am. Journalist..... 1820..1867

**Decatur,** Stephen. American Commodore..... 1815..1876

**Deguerry,** or Du Guerry, Abbé Gaspard. French Scholar and Orator..... 1797..1871

**De Haven,** Edwin J. American Arctic Voyager..... 1819..1865

**De Koven,** James, D. D. American Clergyman..... 1832..1879

**Delafield,** Edward. American Physician..... 1794..1875

**Delafield,** Richard. Brevet Major-General, U. S. A..... 1798..1873

**Delafosse,** Gabriel. French Scholar..... 1795..1878

**Delane,** John Thaddeus. British Journalist..... 1817..1879

**Delangle,** Claude Alphonse. French Jurist and Statesman.. 1797..1869

| | BORN. | DIED. |
|---|---|---|
| **Delaporte**, Michel. French Vaudevilliste | 1802 | 1872 |
| **De la Rive**, Auguste, M. D. Swiss Physicist and Author | 1801 | 1873 |
| **Delavan**, Edward C. Amer. Philanthropist and Reformer | 1793 | 1871 |
| **Delavigne**, Germain. French Dramatist | 1789 | 1868 |
| **Delitzsch**, Johannes. German Theological Professor | 1846 | 1876 |
| **Delord**, Taxile. French Writer and Politician | 1815 | 1877 |
| **Dembinski**, Henry. Polish General | 1791 | 1864 |
| **De Morgan**, Augustus. English Mathematician and Author. | 1806 | 1871 |
| **Denin**, Miss Susan. American Actress | 1835 | 1875 |
| **Denio**, Hiram, LL. D. American Jurist | 1799 | 1871 |
| **Dennett**, John Richard. American Journalist and Professor. | 1837 | 1874 |
| **Denny**, Thomas. American Merchant and Banker | 1804 | 1874 |
| **De Puy**, Henry Walter. American Author | 1820 | 1876 |
| **Derby**, Geoffrey Stanley, Earl of. Statesman | 1799 | 1868 |
| **De Sanctis**, Luigi, D. D. Italian Divine. (*Arnico de Casa.*) | 1808 | 1869 |
| **Deschamps**, Emile. French Poet, Essayist, Novelist | 1791 | 1871 |
| **Despois**, Eugène André. French Writer | 1818. | 1876 |
| **Desportes**, M. French Translator, Dramatist, Compiler | 1798 | 1866 |
| **Devrient**, Wilhelmina Schroeder. Ger. Singer and Actor | 1805 | 1860 |
| **De Walden**, Thomas Blaides. English Actor and Dramatic Writer | 1813? | 1873 |
| **Dewey**, Chester. American Physician | 1781 | 1867 |
| **Diaz de la Pena**, Narcisse Virgile. French Painter | 1809 | 1876 |
| **Dick**, James T. American Artist | 1838 | 1868 |
| **Dick**, Robert. Scotch Geologist and Botanist (known as the Baker of Thurso) | 1811 | 1866 |
| **Dick**, Prof. William. British Surgeon and Author | 1793 | 1866 |
| **Dickens**, Augustus N. Brother of Charles Dickens | 1826 | 1866 |
| **Dickens**, Charles. English Novelist | 1812 | 1870 |
| **Dickinson**, Daniel Stevens. American Statesman | 1800 | 1866 |
| **Dickinson**, John, F. R. S. Paper-maker, Inventor, Philosopher, Astronomer, Geologist, Geographer | 1782 | 1869 |
| **Dickson**, Samuel Henry. American Physician and Writer | 1798 | 1872 |
| **Didot**, Ambrose Firmin. French Publisher and Author | 1790 | 1876 |
| **Dieudonne**, Dr., of Brussels. Medical Writer | 1811? | 1865 |
| **Diez**, Friedrich Christian. Student of the Romance Languages. | 1794 | 1876 |
| **Dilke**, Sir Charles Wentworth. Jour. and Art Connoisseur | 1810 | 1869 |
| **Dillwyn**, Lewis W. Welsh Naturalist | 1778 | 1855 |
| **Di Luca**, Ferdinando. Geographer and Mathematician | 1809? | 1869 |
| **Dimick**, Justin. Brevet Brigadier-General, U. S. A. | 1800 | 1871 |
| **Dix**, John Adams, American General and Statesman | 1798 | 1879 |
| **Dixon**, James. American Politician | 1814 | 1873 |
| **Dixon**, Joseph. American Inventor | 1798 | 1869 |
| **Dixon**, William Hepworth. English Author. (*New America; Her Majesty's Tower.*) | 1821 | 1879 |
| **Djelal-eddyn Roumi**. Persian Mystic Poet | 1195, | 1262 or 71 |
| **Dod**, Captain Robert Phipps. Peerage Compiler | — | 1864 |
| **Dodge**, Nathaniel S. American Author | 1810 | 1874 |
| **Dodo**, John Bovee. American Author and Psychologist | 1795 | 1872 |
| **Donati**, Prof. Astronomer | — | 1873 |
| **Donelson**, Andrew Jackson. American Politician, Editor, Diplomatist | 1800 | 1871 |

BORN. DIED.

**Donner, Johann Jacob Christian.** German Translator..... 1799..1875
**Donoughmore, John Hely Hutchinson, Earl of.** General.... 1757..1832
**Donoughmore, Richard Hely Hutchinson, Earl of.** Soldier and Statesmen..... 1756..1825
**Donovan, Michael.** Irish Chemist..... — ..1876
**Doran, Dr. John.** British Author and Editor..... 1807..1878
**Doring, Theodor.** German Actor..... 1803..1878
**Dorsey, Mrs. Sarah A.** Amer. Writer and Conversationalist.. 1829..1879
**Dowling, John.** American Clergyman and Author..... 1807..1878
**Doyle, John.** English Caricaturist and Painter..... 1798..1868
**Dove, Heinrich Wilhelm.** German Scientist..... 1803. 1878
**Drake, Andrew Jackson.** American Naval Commander..... 1818?..1875
**Drake, Samuel G.** American Antiquarian..... 1798..1875
**Drayton, Henri.** Opera Singer, Actor, and Author..... 1822..1872
**Dreyse, Herr von.** Inventor of the Needle Gun..... 1787..1867
**Drozdof, Rev. Philarete.** Archbishop of Moscow..... 1782..1867
**Drummond, James.** British Painter..... 1816..1877
**Dubellay du Resnel, John Francis.** French Writer..... 1692..1761
**Dubner, Frederick.** Hellenistic Scholar..... 1802..1867
**Dudley, Benjamin Winslow.** Am. Surgeon and Professor.... 1785..1870
**Duff, Alexander.** Scotch Missionary..... 1806..1878
**Duff-Gordon, Lady Lucy** (*née* Lucy Austin). Author, Translator, and Traveller..... 1820..1869
**Duffield, George.** American Clergyman, Scholar, and Author. 1794..1868
**Dufour, Henry.** Swiss General..... 1789..1875
**Duggan, Peter Paul.** American Artist..... — ..1861
**Dulce y Gary, Domingo.** Spanish Soldier..... 1808..1869
**Dumas, Alexandre Davy,** Sen. French Novelist and Dramatist. 1803..1870
**Dumont, Ebenezer.** Brigadier-General, U. S. Vols..... 1814..1871
**Dumont, Léon.** French Scholar..... 1838..1877
**Dunglison, Robley,** M. D. Amer. Med. Professor and Author, 1798..1869
**Dupanloup, Félix Antonio Philippe.** French Prelate..... 1802..1878
**Dupin, Andrew Mary John James.** French Jurist and Statesman..... 1783..1865
**Dupont, Samuel Francis.** Rear-Admiral, U. S. Navy..... 1803..1865
**Durand, Elias.** American Botanist..... 1794..1873
**Durang, Charles.** American Actor..... 1794..1870
**Durham, Joseph.** British Sculptor. (*Leander and the Siren.*) 1821..1877
**Duringsfeld, Ida von.** Poet and Romance Writer..... 1815..1876
**Dussard, Hippolyte.** Writer on Political Economy..... 1798..1876
**Duyckink, Evert Augustus.** American Author..... 1816..1878
**Dwight, Rev. Harrison Gray Otis.** American Missionary and Writer..... 1803..1862
**Dwight, Mary Anne.** (*Mythology.*)..... 1806..1858
**Dwight, Theodore.** American Editor and Author..... 1797..1866
**Dyce, Rev. Alexander.** English Critic and Commentator..... 1798..1869
**Dyer, Alexander B.** Brevet Major-General, U. S. A..... 1817..1874

# E.

| | BORN. | DIED. |
|---|---|---|
| **Eames, Charles.** American Lawyer, Journalist, Diplomatist.. | 1812.. | 1867 |
| **Early, John,** D. D. Methodist Episcopal Bishop..... | 1785.. | 1873 |
| **Eastburn, Manton.** Protestant Episcopal Bishop..... | 1801.. | 1872 |
| **Eastman, Harvey G.** American Educator ..... | 1832.. | 1878 |
| **Eastman, Oman.** American Presbyterian Clergyman..... | 1796.. | 1874 |
| **Eaton, Amos.** American Botanist..... | 1776?. | 1842 |
| **Eckfeldt, Jacob R.** Chief Assayer of U. S. Mint..... | 1802.. | 1872 |
| **Eddy, Edward.** American Actor..... | 1821.. | 1875 |
| **Eddy, Norman.** Amer. Politician and Government Official... | 1810.. | 1872 |
| **Eddy, Rev. Thomas M.** Journalist and Author ..... | 1823.. | 1874 |
| **Eden, Hon. Emily.** English Traveller and Authoress ..... | 1795.. | 1869 |
| **Eggert, Franz Xavier.** German Painter on Glass..... | 1802.. | 1876 |
| **Eglinton, Archibald William, Earl of. Lord Lieutenant of Ireland**..... | 1812.. | 1861 |
| **Ehrenberg, Christian Gottfried.** German Naturalist..... | 1795.. | 1876 |
| **Ehrnfeuchter, Frederick August Eduard.** Ger. Theologian. | 1814.. | 1878 |
| **Eichwald, Karl Eduard.** Russian Naturalist..... | 1795.. | 1876 |
| **Elah.** King of Israel (B. C. 930-929)..... | — B.C. | 929 |
| **Eli.** High Priest and Judge of Israel..... | fl. B. C. | 1171 |
| **Eligius,, or Eloy, St.** Bishop of Tournay and Noyon..... | 588.. | 659 |
| **Elijah.** Prophet of Israel..... | fl. B.C. | 910..896 |
| **Eliot, Thomas D.** American Lawyer and Politician..... | 1808.. | 1870 |
| **Elizabeth.** Princess; daughter of Charles I..... | 1635.. | 1650 |
| **Elizabeth.** Queen-Dowager of Prussia..... | 1801.. | 1873 |
| **Ellenborough, Edward Lan, Earl of.** English Statesman.... | 1790.. | 1871 |
| **Ellet, Charles.** American Engineer..... | 1810.. | 1862 |
| **Ellet, Mrs. Elizabeth F. L.** American Author..... | 1818.. | 1877 |
| **Ellice, Edward,** M. P. Politician ..... | 1789.. | 1863 |
| **Elliot, Charles.** American Clergyman, Editor and Author.... | 1792.. | 1869 |
| **Elliot, Charles Loring.** American Portrait Painter..... | 1812.. | 1868 |
| **Elliotson, John.** English Physician and Author..... | 1788.. | 1868 |
| **Elliott, Charlotte.** English Hymn Writer..... | 1789.. | 1871 |
| **Elliott, Sir Gilbert, or Earl Minto.** Gov.-Gen. of Bengal..... | 1751.. | 1814 |
| **Elliott, Stephen, Jr.** "Confederate" Brigadier-General..... | 1832.. | 1866 |
| **Ellis, Sir Henry.** Bibliographer and Author ..... | 1777.. | 1869 |
| **Ellis, John Willis.** Governor of North Carolina; prominent Secessionist..... | 1820.. | 1861 |
| **Ellis, Rev. Robert Leslie, of Cambridge.** Mathematician and Philosopher..... | 1817.. | 1859 |
| **Ellis, Welbore, created Lord Mendip.** Politician ..... | 1714.. | 1802 |
| **Ellis, Rev. William.** Eng. Missionary, Traveller, Author..... | 1795.. | 1872 |
| **Ellsworth, Ephraim Elmer.** American Military Officer..... | 1837.. | 1861 |
| **Elmes, James.** Architect and Author ..... | 1783.. | 1862 |
| **Eloy, or Eligius, St.** Bishop of Tournay and Noyon ..... | 588.. | 650 |
| **Elton, Romeo,** D. D. American Clerg., Prof. and Author..... | 1792.. | 1870 |
| **Elwart, Antoine Amable Elie.** French Composer..... | 1808.. | 1877 |
| **Elzey, Arnold.** "Confederate" Brigadier-General..... | 1816.. | 1871 |
| **Emerson, Brown,** D. D. American Divine..... | 1778.. | 1872 |
| **Engles, William Morrison.** Amer. Pres. Clerg. and Author.. | 1797.. | 1867 |

| | BORN. | DIED. |
|---|---|---|
| **Eotvos, Baron Jozsef.** Hungarian Statesman and Author... | 1813.. | 1871 |
| **Erman, Georg Adolf.** German Scholar ..... | 1806.. | 1877 |
| **Espartero, Joaquin Baldomero.** Sp. Soldier and Statesman. | 1792.. | 1879 |
| **Esquiros, Henri Alphonse.** French Writer and Politician.... | 1814.. | 1876 |
| **Ettmüller, Ernst Ludwig.** German Scholar..... | 1802.. | 1877 |
| **Evans, Arthur Benoni.** Classical Scholar; Writer..... | 1781.. | 1855 |
| **Evans, Prof. Evan William.** Professor and Celtic Scholar.... | 1827.. | 1874 |
| **Evans, Sir George de Lacy.** British General and Author..... | 1787.. | 1870 |
| **Evans, N. George.** "Confederate" General..... | 1828?.. | 1868 |
| **Evans, Robert Wilson.** English Clergyman and Author..... | 1789.. | 1866 |
| **Evans, William.** English Water Color Painter..... | 1797.. | 1878 |
| **Ewald, Georg Heinrich August von.** German Orientalist.... | 1803.. | 1875 |
| **Ewart, William, M. P.** (*The Reform of the Reform Bill.*)..... | 1798.. | 1869 |
| **Ewbank, Thomas.** English Scientist..... | 1792.. | 1870 |
| **Ewell, Richard Stoddard.** "Confederate" Lieut.-General.... | 1820.. | 1872 |
| **Ewing, Thomas, LL. D.** American Jurist and Statesman..... | 1789.. | 1871 |
| **Exeter, Henry Phillpotts, D. D.** English Prelate and Author.. | 1778.. | 1869 |
| **Eyre, Sir William.** Major-General..... | — .. | .1859 |

## F.

| | | |
|---|---|---|
| **Faber, Peter Christian Frederik.** Danish Poet..... | 1810.. | 1877 |
| **Fagnani, Joseph.** Portrait Painter..... | 1819.. | 1873 |
| **Fairbairn, Patrick, D. D.** Scottish Clergyman and Author... | 1805.. | 1874 |
| **Fairbairn, Sir William.** British Civil Engineer..... | 1789.. | 1874 |
| **Fairbanks, Erastus.** American Manufacturer and Statesman, | 1792.. | 1864 |
| **Fairchild, Cassius.** Brevet Brigadier-General, U. S. A..... | 1828.. | 1868 |
| **Fairholt, Frederick William.** English Author and Artist..... | 1814.. | 1866 |
| **Falke, Johannes Frederich Gottlieb.** German Historian..... | 1823.. | 1876 |
| **Fanfani, Pietro.** Italian Philologist..... | 1815.. | 1879 |
| **Faraday, Michael, F. R. S.** English Physicist..... | 1791.. | 1867 |
| **Farini, Carlo Luigi.** Italian Author and Statesman..... | 1822.. | 1866 |
| **Farmer, George Edgar.** Lieutenant-Colonel, U. S. Vols..... | 1840.. | 1870 |
| **Farnham, Mrs. Eliza W.** Amer. Philanthropist and Writer.. | 1815.. | 1864 |
| **Farnum, J. Egbert.** Brevet Brigadier-General, U. S. Vols... | 1824.. | 1870 |
| **Farragut, David Glascoe.** American Admiral..... | 1801.. | 1870 |
| **Farrar, Mrs. Eliza Ware.** American Authoress..... | 1792.. | 1870 |
| **Faucher, Julius.** German Political Economist..... | 1820.. | 1878 |
| **Faud, Mehmed, Pacha.** Turkish Statesman and Author..... | 1814.. | 1869 |
| **Fawsitt, Miss Amy.** Actress..... | 1836.. | 1876 |
| **Fay, Joseph.** German Painter..... | 1813.. | 1875 |
| **Fazy, Jean James.** Swiss Politician..... | 1796.. | 1878 |
| **Fechter, Charles Albert.** French Actor..... | 1824.. | 1879 |
| **Felice, Guillaume de, D. D.** French Author and Professor.... | 1803.. | 1871 |
| **Felt, Rev. Joseph Barlow.** American Antiquarian Writer.... | 1789.. | 1869 |
| **Fenno, A. W.** American Actor..... | 1814.. | 1873 |
| **Ferdinand I.** Ex-Emperor of Austria..... | 1793.. | 1875 |
| **Ferdinand, Maximilian Joseph.** Emperor of Mexico. Executed..... | 1832.. | 1867 |

| | BORN. | DIED. |
|---|---|---|
| **Fernkorn**, Anton Dominick. Austrian Sculptor | 1813 | 1878 |
| **Ferrari**, Giuseppe. Italian Philosophical Writer | 1812 | 1876 |
| **Ferre**, Théophile Charles. Communist Leader | 1846 | 1871 |
| **Ferris**, Isaac, D. D. American Clergyman and Teacher | 1799 | 1873 |
| **Ferry**, Orris S. U. S. Senator and Brigadier General | 1823 | 1875 |
| **Fessenden**, Samuel. American Lawyer | 1784 | 1869 |
| **Fessenden**, William Pitt. American Statesman | 1806 | 1869 |
| **Fetis**, François Joseph. Belgian Music Composer, Critic and Author | 1784 | 1871 |
| **Feuerbach**, Ludwig Marie. German Philosopher | 1804 | 1872 |
| **Fichte**, Immanuel Hermann. German Philosopher | 1796 | 1879 |
| **Field**, David Dudley, D. D. Amer. Congl. Clerg. and Author. | 1781 | 1867 |
| **Field**, George. Chemist and Writer | — | 1854 |
| **Field**, Mrs. Henry M. Amer. Artist and Conversationalist | — | 1875 |
| **Field**, Jonathan Edwards. American Lawyer | 1813 | 1868 |
| **Fillmore**, Millard. Amer. Statesman. President, 1850–1853. | 1800 | 1874 |
| **Finlay**, George. British Historian | 1800 | 1875 |
| **Finney**, Rev. Charles G. Evangelist and College President | 1792 | 1875 |
| **Fish**, Asa. American Lawyer | 1820 | 1879 |
| **Fisher**, Redwood. American Journalist, Political Economist and Statistician | 1783 | 1856 |
| **Fitch**, Eleazar Thompson, D. D. Amer. Theol. and Prof. | 1791 | 1871 |
| **Fitzpatrick**, Benjamin. American Statesman | 1802 | 1869 |
| **Fitzpatrick**, John Bernard. Rom. Cath. Bishop of Boston | 1812 | 1866 |
| **Flagg**, Azariah C. American Politician and Financier | 1790 | 1873 |
| **Flahaut de la Billarderie**, Auguste Charles Joseph, Comte de | 1785 | 1870 |
| **Fletcher**, Richard. American Jurist | 1788 | 1869 |
| **Flocon**, Ferdinand. French Publicist and Novelist | 1800 | 1866 |
| **Floyd**, John Buchanan. American Politician and Secessionist; "Confederate" General | 1805 | 1863 |
| **Floyd-Jones**, David R. American Political Leader | 1812 | 1871 |
| **Flusser**, Charles W. American Naval Officer | 1832? | 1864 |
| **Foley**, John Henry. British Sculptor | 1818 | 1874 |
| **Foley**, Thomas, D. D. Roman Catholic Priest | 1822 | 1879 |
| **Folsom**, George. Diplomatist, Antiquarian, Author | 1802 | 1869 |
| **Foltz**, Philipp von. German Painter | 1805 | 1877 |
| **Fonblanque**, Albany William. English Author | 1795 | 1872 |
| **Foot**, Solomon. American Statesman | 1802 | 1866 |
| **Forbiger**, Albert. German Classical Scholar | 1798 | 1878 |
| **Forcade-Laroquette**, Jean Louis de. French Cabinet Minister | 1820 | 1874 |
| **Force**, Peter. American Historian and Journalist | 1790 | 1868 |
| **Forey**, Elie Frédéric. French Marshal and Senator | 1804 | 1872 |
| **Forrest**, Edwin. American Tragedian | 1806 | 1872 |
| **Forrest**, Nathan Bedford. "Confederate" General | 1821 | 1877 |
| **Forrest**, Robert. Scottish Sculptor | — | 1853 |
| **Forrester**, Albert Henry. *Alfred Crowquill.* Eng. Artist | 1805 | 1872 |
| **Forster**, John. British Biographer | 1812 | 1876 |
| **Foster**, John G. Brevet Major-General, U. S. A | 1823 | 1874 |
| **Foster**, John Wells. American Scientist and Paleontologist | 1815 | 1873 |

| | BORN. | DIED. |
|---|---|---|
| **Foucher**, Paul. French Dramatic Writer | 1810.. | 1875 |
| **Fould**, Achille. French Statesman and Financier | 1800.. | 1867 |
| **Fourdrinier**, Henry. Inventor | 1766.. | 1855 |
| **Fowler**, Rev. Henry. American Journalist and Author | 1824.. | 1872 |
| **Fox**, Sir Charles. British Civil Engineer | 1810.. | 1874 |
| **Fox**, Charles Kemble. American Actor | 1833.. | 1875 |
| **Fox**, George L. American Pantomimist | 1825.. | 1877 |
| **Franchi**, Allessandro. Italian Cardinal | 1819.. | 1878 |
| **Francis V.** Duke of Modena | 1809.. | 1875 |
| **Francis**, Rev. Convers, D. D. American Theol. and Writer | 1796.. | 1863 |
| **Francis**, George Henry. English Editor and Author | 1816.. | 1866 |
| **Frankel**, Zacharias. Rabbi and Author | 1801.. | 1875 |
| **Frankenstein**, Godfrey N. American Painter. (*Battle of Gettysburg*) | 1831.. | 1873 |
| **Franklin**, Lady Jane. Wife of Sir John Franklin | 1805?. | 1875 |
| **Frederick** William, ex-Elector of Hesse | 1802.. | 1875 |
| **Frederick** William, Prince of Hesse | 1790.. | 1876 |
| **Fredro**, Count Alexander. Polish Author | 1793*. | 1876 |
| **Freiligrath**, Ferdinand. German Poet | 1810.. | 1876 |
| **Frementin**, Eugène. French Painter | 1820.. | 1876 |
| **French**, John W., D. D. Episcopal Clergyman and Professor. | 1810?. | 1871 |
| **French**, Mansfield. "Chaplain French." Amer. Clergyman. | 1810.. | 1876 |
| **Fries**, Elias Magnus. Swedish Botanist | 1794.. | 1878 |
| **Frossard**, Charles Auguste. French General | 1807.. | 1875 |
| **Frost**, John. Compiler of School Books | 1800.. | 1859 |
| **Frost**, William Edward. British Painter | 1810.. | 1877 |
| **Frothingham**, Nathaniel Langdon. Unit. Clerg. and Author. | 1793.. | 1870 |
| **Fry**, Joseph Reese. Scholar and Musical Writer | — .. | 1863 |
| **Fuhrich**, Joseph von. German Painter | 1800.. | 1876 |
| **Fulford**, Francis, D. D. Bishop of Montreal | 1803.. | 1868 |
| **Fuller**, Richard. American Clergyman. (*The Psalmist.*) | 1804.. | 1876 |
| **Funk**, Heinrich. German Painter of Tyrolese Scenes | 1807.. | 1877 |

## G.

| | | |
|---|---|---|
| **Gablentz**, Ludwig Karl Wilhelm, Baron von. Aus. Soldier. | 1814.. | 1874 |
| **Gannett**, Ezra Stiles, D. D. American Clerg. and Author | 1801.. | 1871 |
| **Garbett**, James. English Scholar and Clergyman | 1802.. | 1879 |
| **Garcia y Tessara**, Gabriel. Spanish Poet | 1817.. | 1875 |
| **Gardner**, Charles K. American Military Officer and Writer. | 1787.. | 1869 |
| **Gardner**, William. Writer on Music and Art | 1764.. | 1854 |
| **Garner**, Thomas. English Engraver. (*Rake's Progress.*) | — .. | 1868 |
| **Garnett**, Richard B. "Confederate" General | — .. | 1863 |
| **Garnett**, Robert Selden. "Confederate" General | 1822.. | 1861 |
| **Garnier-Pages**, Louis Antoine. Fr. Politician and Historian | 1803.. | 1878 |
| **Garrison**, William Lloyd. Amer. Editor and Abolitionist | 1804.. | 1879 |
| **Gasparin**, Agenor Etienne, Count de. Statesman, Philanthropist, Author | 1810.. | 1871 |

| | BORN. | DIED. |
|---|---|---|
| **Gastaldi, Professor.** Italian Geologist | 1818.. | 1879 |
| **Gates, William.** Brevet Brigadier-General, U. S. A. | 1788.. | 1868 |
| **Gatty, Mrs. Margaret Scott.** (Mrs. Alfred G.) Eng. Writer. | 1809.. | 1873 |
| **Gaume, Jean Joseph.** D. D. French Roman Catholic Theologian and Author | 1802.. | 1869 |
| **Gauntlett, Henry John,** MUS. DR. Eng. Com. of Chh. Music. | 1806.. | 1876 |
| **Gautier, Théophile.** French Poet, Critic, Novelist | 1811.. | 1872 |
| **Geary, John White.** Major-General, U. S. Vols | 1819.. | 1873 |
| **Gegenbaur, Joseph Anton von.** German Painter | 1800.. | 1876 |
| **Geiger, Abraham.** Jewish Rabbi and Author | 1810.. | 1874 |
| **George V.** Ex-King of Hanover | 1819.. | 1878 |
| **Gerstacker, Friedrich.** German Traveller and Novelist | 1816.. | 1872 |
| **Gervinus, George Gottfried,** PH. D. Historian and Statesm'n. | 1805.. | 1871 |
| **Geselschap, Eduard.** Dutch Painter | 1808.. | 1878 |
| **Gibbes, Robert Wilson.** American Historian, Palæontologist and Physicist | 1809.. | 1866 |
| **Gibbs, Alfred.** Brevet Major-General, U. S. A. | 1823.. | 1868 |
| **Gibbs, George.** American Philologist, Antiquarian, Author. | 1817.. | 1873 |
| **Gibson, John, R. A.** English Sculptor | 1790.. | 1866 |
| **Gibson, William.** American Surgeon and Author | 1788.. | 1868 |
| **Giesebucht, Ludwig,** PH. D. German Poet and Historian | 1792.. | 1873 |
| **Gilbert, George A.** American Artist in Water Colors | 1815.. | 1877 |
| **Gilbert, Mrs. John.** American Actress | 1801.. | 1866 |
| **Gillespie, William Mitchell,** LL. D. American Engineer, Professor and Author | 1816.. | 1868 |
| **Gillett, Ezra H.** American Clergyman and Author. (*Life and Times of J. Huss.*) | 1823.. | 1875 |
| **Gilliams, Jacob.** American Physicist and Naturalist | 1784.. | 1868 |
| **Ginzel, Joseph August.** Austrian Church Historian | 1804.. | 1876 |
| **Giseke, Bernhard Ludwig.** German Philologist | 1823.. | 1876 |
| **Giskra, Karl.** Austrian Statesman | 1820.. | 1879 |
| **Giudici, Paolo Emiliani.** Italian Author | 1812.. | 1872 |
| **Glassbrenner, Adolf.** German Humorist | 1810.. | 1876 |
| **Godon, Sylvanus W.** American Naval Officer | — .. | 1879 |
| **Goicouria, Domingo de.** Cuban Revolutionist | 1799.. | 1870 |
| **Goldschmidt, Herman.** German Painter and Astronomer | 1802.. | 1866 |
| **Goldschmidt, Paul.** German Orientalist | 1850.. | 1877 |
| **Goodell, William.** American Clergyman and Missionary | 1792.. | 1867 |
| **Goodrich, Rev. Charles A.** American Writer | 1790.. | 1862 |
| **Goodrich, Rev. Chauncey.** American Scholar and Author | 1817.. | 1868 |
| **Goodyear, Charles.** American Inventor | 1800.. | 1860 |
| **Gordon, Sir James Alexander.** British Admiral | 1782.. | 1869 |
| **Gortchakoff, Prince Peter Dmitrievitch.** Russian General. | 1789.. | 1868 |
| **Goszczyuski, Severinus.** Polish Poet | 1806.. | 1876 |
| **Gottlieb, Johann.** Austrian Chemist | — .. | 1875 |
| **Gottschalk, Louis Morcau.** Amer. Pianist and Composer | 1829.. | 1869 |
| **Gough, Hugh.** British Military Officer | 1779.. | 1869 |
| **Gould, Augustus Addison.** Amer. Naturalist and Physician. | 1805.. | 1866 |
| **Govone, Guiseppe.** Italian Soldier and Statesman | 1826.. | 1873 |
| **Gowans, William.** American Bibliopolist and Author | 1805.. | 1870 |
| **Gozlan, Léon.** French Dramatist and Littérateur | 1806.. | 1866 |

| | BORN. | DIED. |
|---|---|---|
| **Graham, Thomas.** English Physicist and Chemist | 1805 | 1869 |
| **Graham, William A.** American Statesman | 1804 | 1875 |
| **Granger, Francis.** American Politician | 1787 | 1868 |
| **Granier de Cassagnac, Paul de.** French Journalist | 1841 | 1870 |
| **Grannis, Theodore C.** American Journalist | 1831 | 1878 |
| **Grant, Robert Edmund.** British Anatomist, Zoologist and Author | 1793 | 1874 |
| **Grant, Sir Francis.** British Painter | 1803 | 1878 |
| **Grass, Philippe.** French Sculptor | 1801 | 1876 |
| **Grassmann, Hermann Günther.** German Mathematician and Oriental Scholar | 1809 | 1877 |
| **Gratry, Auguste Joseph Alphonse.** Fr. Cath. Theologian | 1805 | 1872 |
| **Graul, Charles.** German Scholar and Writer | — | 1864 |
| **Gray, Francis Calley.** American Scholar and Writer | 1790 | 1856 |
| **Gray, Henry Peters.** American Painter | 1819 | 1877 |
| **Gray, John Edward.** British Naturalist | 1800 | 1875 |
| **Grayson, John Breckinridge.** "Confederate" General | 1807 | 1862 |
| **Greeley, Horace.** Am. Journalist, Founder of N. Y. *Tribune.* | 1811 | 1872 |
| **Green, Rev. Beriah.** American Reformer | 1794 | 1874 |
| **Green, Duff.** American General, Politician and Editor | — | 1875 |
| **Green, Horace.** American Physician and Professor | 1802 | 1866 |
| **Green, Thomas J.** "Confederate" General | 1801 | 1863 |
| **Greene, Albert Gorton.** American Jurist and Poet | 1802 | 1868 |
| **Greene, David.** Cong. Clergyman. (*Church Psalmody.*) | 1797 | 1866 |
| **Greene, William B.** American Mathematician and Author | 1819 | 1878 |
| **Greene, Nathaniel.** American Journalist and Author | 1797 | 1877 |
| **Greenough, George Bellas.** Geol. and Physical Geog | 1777 | 1854 |
| **Gregg, John.** "Confederate" General | 1828 | 1864 |
| **Gregory, Dr. William.** Chemist and Writer on Chemistry | — | 1858 |
| **Gregory, Francis H.** Rear Admiral, U. S. N | 1789 | 1866 |
| **Greiner, John.** American Politician and Journalist, Writer of Political Songs | 1811 | 1871 |
| **Greswell, Rev. Edward.** Theological and Chronological Writer | 1797 | 1869 |
| **Greville, Robt. Kaye.** Scot. Botanist and Philanthropist | 1794 | 1866 |
| **Grier, Robert Cooper.** American Jurist | 1794 | 1870 |
| **Griffin, Charles.** Brevet Major-General, U. S. A | 1826 | 1867 |
| **Griffin, George.** American Theological Writer | 1778 | 1860 |
| **Gillparzer, Franz.** German Dramatic Poet | 1791 | 1872 |
| **Grimm, Louis Emilius.** German Engraver | 1790 | 1863 |
| **Grinnell, Henry.** American Merchant and Philanthropist | 1800 | 1874 |
| **Griscom, John Hoskins.** Amer. Physician and Humanitarian | 1809 | 1874 |
| **Grisi, Giulia.** Italian Opera Singer | 1812 | 1869 |
| **Griswold, John A.** Amer. Manufacturer and Politician | 1822 | 1872 |
| **Groen van Prinsterer, Willem.** Dutch Historian | 1801 | 1876 |
| **Grossmith, John.** English Chemist and Author. (*The Usury Laws.*) | 1814 | 1867 |
| **Grote, George,** D. C. L., F. R. S. Historian and Statesman. (*History of Greece.*) | 1794 | 1871 |
| **Grote, Mrs. Harriet Lewin.** Wife of George Grote | 1792 | 1878 |
| **Grote, John.** English Clergyman and Philosophical Writer. | 1813 | 1866 |

| | BORN. | DIED. |
|---|---|---|
| **Grover**, Rev. Henry Montague. Rel., Scient. and Dram. Writer. | 1791 | 1866 |
| **Grund**, Francis J. American Writer | 1803 ? | 1863 |
| **Gruppe**, Otto Friedrich. German Philosopher and Poet | 1804 | 1876 |
| **Gueranger**, Dorn Prosper. French Benedictine Monk | 1806 | 1875 |
| **Guericke**, Heinrich Ernst Ferdinand. German Theologian | 1803 | 1878 |
| **Gueronniere**, Viscount Louis Etienne A. D. H., de la. Writer and Politician | 1816 | 1875 |
| **Guerrazzi**, Francisco Dominico. It. Revolutionist and Writer. | 1805 | 1873 |
| **Guest**, John. American Naval Officer | 1821 | 1879 |
| **Guiccioli**, Teresa Gamba, Countess. (*My Recollections of Lord Byron.*) | 1801 | 1873 |
| **Guidi**, Filippo Maria. Italian Cardinal | 1815 | 1875 |
| **Guidicini**, Guisseppe. Architect and Painter | 1812 | 1868 |
| **Guigniaut**, Joseph Daniel. French Scholar | 1794 | 1876 |
| **Guizot**, François Pierre Guillaume. French Statesman, Diplomatist, Historian | 1787 | 1874 |
| **Gunnison**, J. W. American Topographical Engineer | — | 1853 |
| **Gurney**, Rev. John Hampden. Writer | 1802 | 1862 |
| **Gurney**, Sir Goldsworthy. English Inventor | 1793 | 1875 |
| **Gurney**, William. American Military Officer | 1821 | 1879 |
| **Gurowski**, Count Adam de. Polish Publicist | 1805 | 1866 |
| **Guthrie**, James, LL. D. American Statesman | 1792 | 1869 |
| **Guthrie**, Thomas, D. D. Scotch Clergyman and Author | 1803 | 1873 |
| **Gutzkow**, Karl Ferdinand. German Novelist | 1811 | 1878 |
| **Gwinn**, William. American Naval Officer | 1831 | 1863 |

## H.

| | | |
|---|---|---|
| **Hackett**, Horatio Balch, D. D. American Biblical Scholar | 1808 | 1875 |
| **Hackett**, James Henry. American Actor | 1800 | 1871 |
| **Hacklander**, Friedrich Wilhelm. German Novelist | 1816 | 1877 |
| **Hackleman**, Pleasant A. American General | — | 1862 |
| **Hadley**, James, LL. D. Amer. Schol., Philologist and Prof | 1821 | 1872 |
| **Haffner**, Karl. German Novelist and Dramatist | 1815 | 1876 |
| **Hagenbach**, Karl Adolf. German Theologian and Author | 1801 | 1874 |
| **Haidinger**, Wilhelm. Geologist, Geographer, Engineer | 1795 | 1871 |
| **Haigh**, Rev. R. B., LL. D. Orientalist and Philologist | 1804 | 1869 |
| **Halbertsma**, Hilde J. Anatomist and Physiologist | 1820 | 1865 |
| **Hale**, Benjamin, D. D. American Writer | 1797 | 1863 |
| **Hale**, John Parker. American Senator and Diplomatist | 1806 | 1873 |
| **Hale**, Mrs. Sarah Josepha Buel. American Authoress | 1795 | 1879 |
| **Hall**, Allen A. American Journalist and Diplomatist | — | 1867 |
| **Hall**, Baynard, D. D. American Writer and Educator | 1798 | 1863 |
| **Hall**, Caldwell K. Brevet Brigadier-General, U. S. Vols | 1839 | 1870 |
| **Hall**, James. American Lawyer, Editor, Author, Banker | 1793 | 1868 |
| **Hall**, Hon. Willis. American Lawyer and Politician | 1801 | 1868 |
| **Halleck**, Fitz-Greene. American Poet | 1790 | 1867 |
| **Halleck**, Henry Wager. Major-General, U. S. A | 1815 | 1872 |
| **Hallett**, Benjamin F. American Politician | 1798 | 1862 |

| | BORN. | DIED. |
|---|---|---|
| **Halliday-Duff**, Andrew. British Writer | 1830. | .1877 |
| Hallock, Gerard. American Journalist | 1800. | .1866 |
| Halpine, Charles G. Poet, Scholar, Editor and Soldier | 1829. | .1868 |
| Hamblin, Joseph E. Brevet Major-General, U. S. Vols | 1828. | .1870 |
| Hamilton, William John. English Geologist and Traveller | 1805. | .1867 |
| Hammerich, Frederick. Danish Theologian | 1809. | .1877 |
| Hammond, Jabez D. Amer. Lawyer, Legislator and Author. | — | .1855 |
| Haneberg, Daniel von. German Catholic Prelate | 1816. | .1876 |
| Hannay, James. Scottish Novelist | 1827. | .1873 |
| Hansen, Peter Andreas. German Astronomer | 1795. | .1874 |
| Hanson, Mrs. John T. Niece of Oliver Goldsmith | 1786. | .1866 |
| Hanson, Sir Richard Davies. Jurist. (*Jesus of History.*) | 1805. | .1876 |
| Harbaugh, Henry. American Clergyman and Theol. Prof | 1817. | .1867 |
| Hardee, William J. "Confederate" Lieutenant-General | 1817. | .1873 |
| Harding, Abner. Brigadier-General, U. S. Vols | 1807. | .1874 |
| Harding, Chester. American Portrait Painter | — | .1866 |
| Hardwicke, Charles Philip Yorke, Earl of. English Admiral. | 1799. | .1873 |
| Hardy, Sir Thomas Duffus. English Antiquarian | 1804. | .1878 |
| Haro-Harring, Paul. Danish Exile, Painter, Poet, Novelist. | 1799. | .1870 |
| Harper, James. American Publisher | 1795. | .1869 |
| Harper, John. American Publisher | 1797. | .1875 |
| Harper, Joseph Wesley. American Publisher | 1801. | .1870 |
| Harrington, Marie Foote, Countess of. English Actress | 1798. | .1867 |
| Harris, Ira. American Judge and Senator | 1802. | .1875 |
| Harris, Sir William Snow. Physicist, Inventor, Author | 1791. | .1867 |
| Hart, Joel T. American Sculptor | 1810?. | 1877 |
| Hart, John Seely. American Author of Text-books | 1810. | .1877 |
| Hart, Joseph C. American Writer | — | .1855 |
| Hartmann, Julius von. German General | 1817. | .1878 |
| Hartsuff, George L. Major-General, U. S. A | 1830. | .1874 |
| Hartt, Charles Frederick. American Professor and Geologist. | 1840. | .1878 |
| Harvey, Sir George. British Painter | 1805. | .1876 |
| Haskell, Daniel N. American Journalist | 1818. | .1874 |
| Haskin, Joseph A. Brevet Brigadier-General U. S. A | 1817?. | 1874 |
| Hastings, Thomas. American Music Composer and Author | 1784. | .1872 |
| Hauch, Jean Karsten von. Danish Poet, Novelist and Scientist | 1790. | .1872 |
| Haug, Martin. German Orientalist | 1827. | .1876 |
| Haven, Joseph. American Clergyman and Author | 1816. | .1874 |
| Havin, Leonor Joseph. French Publicist and Editor | 1799. | .1868 |
| Hawes, Joel, D. D. American Clergyman and Author | 1789. | .1867 |
| Hawks, Cicero Stanley. Bishop of Protest. Episcopal Church. | 1812. | .1868 |
| Hawks, Francis Lister. American Clergyman and Author | 1798. | .1866 |
| Hawthorne, Mrs. Sophia. Wife of Nathaniel Hawthorne | 1811. | .1871 |
| Hay, David Ramsay. Scotch Portrait Painter | 1798. | .1866 |
| Hays, Alexander. American General | 1823. | .1864 |
| Hays, Isaac. American Scientist and Physician | 1796. | .1879 |
| Hayter, Sir George. Painter-in-Ordinary to her Majesty | 1792. | .1871 |
| Hazard, Samuel. American Archæologist, Historian and Publisher | 1784. | 1870 |
| **Head**, Sir Edmund Walker. English Statesman and Scholar | 1805. | .1868 |

| | BORN. | DIED. |
|---|---|---|
| Head, Sir Francis Bond. English Diplomatist | 1793 | 1875 |
| Heimann, Basili Alexandrovitch. Russian General | 1823 | 1878 |
| Heis, Eduard. German Astronomer | 1806 | 1877 |
| Helps, Sir Arthur. English Diplomatist and Author | 1817 | 1875 |
| Helm, Benjamin Hardin. "Confederate" General | — | 1863 |
| Hemans, Charles Isidore. British Author. (*Catholic Italy.*) | — | 1876 |
| Henderson, J. Pinckney. Amer. Statesman and Diplomatist | 1808 | 1858 |
| Hengstenberg, Ernst Wilhelm. Theologian and Editor | 1802 | 1869 |
| Henneberg, Rudolf. German Painter | 1826 | 1876 |
| Henry, Joseph. American Physicist | 1797 | 1878 |
| Hensel, Louise. German Poetess | 1798 | 1876 |
| Henshaw, David. American Politician | — | 1852 |
| Henshaw, Joshua Sidney. *Belcher.* American Lawyer, Mathematician, and Writer | 1811 | 1859 |
| Herapath, John. English Author and Publisher | 1791 | 1868 |
| Herculano de Carvalho e Araujo, Alexandro. Portuguese Scholar and Historian | 1796? | 1877 |
| Heron, Matilda. American Actress | 1830 | 1877 |
| Herrick, Edward Claudius. American Scientist and Bibliog. | 1811 | 1862 |
| Herring, James. American Portrait Painter | 1793 | 1867 |
| Herschel, Sir John Frederick William, Bart. Astronomer, Physicist, Author | 1792 | 1871 |
| Hertzen, Alexander. Russian Exile and Author | 1816 | 1870 |
| Herwegh, Georg. German Poet | 1817 | 1875 |
| Hess, Peter von. German Painter | 1793 | 1871 |
| Heuglin, Theodor von. German Explorer | 1824 | 1876 |
| Heunert, Karl. German Painter | 1808 | 1876 |
| Hewit, Henry Stuart. American Physician | 1825 | 1873 |
| Hewit, Nathaniel. American Cong. Clergyman and Author | 1788 | 1867 |
| Hexamer, William. American Army Officer | 1825 | 1870 |
| Higgins, Matthew James. *Jacob Omnium.* Eng. Journalist | 1815? | 1868 |
| Hildebrand, Bruno. German Statistician | 1812 | 1878 |
| Hill, Ambrose Powell. "Confederate" General | 1826 | 1865 |
| Hill, David Octavius. Scotch Landscape Painter | 1802 | 1870 |
| Hill, George. American Author | 1796 | 1871 |
| Hill, Sir Rowland. Originator of the Penny Postage in Eng. | 1795 | 1876 |
| Hillard, Francis. American Lawyer and Author of Legal Text Books | 1806 | 1878 |
| Hillard, George Stillman. American Lawyer, Orator, Author. | 1808 | 1879 |
| Hillier, George. English Antiquarian and Historian | 1816 | 1866 |
| Hillyer, William Silliman. Brigadier-General, U. S. Vols. | 1831 | 1874 |
| Hindman, Thomas C. "Confederate" General | 1818 | 1868 |
| Hinman, Royal Ralph. American Politician and Genealogist, | 1784 | 1868 |
| Hinton, John Howard. Eng. Baptist Clergyman and Author. | 1791 | 1873 |
| Hirst, Henry B. American Poet and Writer | 1813 | 1874 |
| Hitchcock, Ethan Allen. Major General, U. S. Vols | 1798 | 1870 |
| Hitzig, Ferdinand. German Biblical Critic | 1807 | 1875 |
| Hoar, Samuel, LL. D. American Jurist | 1778 | 1856 |
| Hodge, Charles. American Clergyman and Author. (*Systematic Theology.*) | 1797 | 1878 |
| Hodge, Hugh Lenox. Amer. Physician and Medical Writer | 1796 | 1873 |

| | BORN. | DIED. |
|---|---|---|
| **Hodge**, James Thatcher. American Geologist and Engineer.. | 1816.. | 1871 |
| **Hodgson**, Joseph, F. R. S. English Surgeon..... | 1788.. | 1869 |
| **Hoffman**, Murray. Amer. Lawyer and Author of Legal Terms. | 1791.. | 1878 |
| **Hoffmann**, Heinrich August. German Poet, Philologist..... | 1798.. | 1874 |
| **Hofmeister**, Wilhelm. German Botanist..... | 1824.. | 1877 |
| **Hogg**, Sir James Weir. British Statesman..... | 1790.. | 1876 |
| **Hohenzollern-Hechingen**, Friedrich Wilhelm Constantine, Prince of..... | 1801.. | 1869 |
| **Holbrook**, John Edward, M. D. Amer. Naturalist and Author. | 1795.. | 1871 |
| **Holland**, George, American Actor..... | 1790.. | 1870 |
| **Holland**, Sir Henry. Traveller, Author, Physician..... | 1788.. | 1873 |
| **Hollins**, George N. American Naval Officer..... | 1799.. | 1878 |
| **Holmes**, Alfred. British Composer..... | 1838.. | 1876 |
| **Holton**, Isaac Farwell. Clerg., Botanist, Chemist, Jour..... | 1812.. | 1874 |
| **Hood**, John B. "Confederate" General..... | 1831.. | 1879 |
| **Hook**, Rev. Walter Farquhar. English Dean. (*Lives of the Archbishops of Canterbury.*)..... | 1798.. | 1875 |
| **Hooker**, Joseph. American Major-General..... | 1815.. | 1879 |
| **Hooper**, John. American Botanist..... | 1802.. | 1869 |
| **Hooper**, Samuel, M. C. American Statesman..... | 1808.. | 1875 |
| **Hopkins**, Rev. Albert. Am. Astronomer and Physicist..... | 1807.. | 1872 |
| **Hopkins**, John Henry, D. D. Bishop of Prot. Epis. Church. | 1792.. | 1868 |
| **Hopkins**, Johns. American Philanthropist..... | 1795.. | 1873 |
| **Horsley**, Charles Edward. American Musical Composer..... | 1825.. | 1876 |
| **Horvath**, Michel. Hungarian Patriot and Historian..... | 1809.. | 1878 |
| **Hosemann**, Theodor. German Painter..... | 1807.. | 1875 |
| **Hosmer**, William H. C. American Author..... | 1814.. | 1877 |
| **Houdin**, Robert John Eugene. French Conjurer..... | 1805.. | 1871 |
| **Hoverbeck**, Leopold, Freihere von. German Politician..... | 1822.. | 1875 |
| **Howard**, Benjamin C. American Jurist..... | 1791.. | 1872 |
| **Howard**, Frank. English Painter and Writer..... | 1805.. | 1866 |
| **Howard**, Jacob Merrit, LL. D. American Statesman..... | 1805.. | 1871 |
| **Howe**, Elias, Jr. American Inventor..... | 1819.. | 1867 |
| **Howe**, Samuel Gridley. American Philanthropist..... | 1801.. | 1876 |
| **Howell**, Robert Boyté Crawford. Clergyman and Author.... | 1801.. | 1868 |
| **Howitt**, William. Eng. Poet, Novelist and Hist. Writer..... | 1795.. | 1879 |
| **Hows**, John A. American Artist and Journalist..... | 1831.. | 1874 |
| **Hoyt**, Adolphus Davenport. American Actor..... | 1831.. | 1873 |
| **Huber**, Johannes. German Scholar..... | 1830.. | 1879 |
| **Huber**, Victor Aimé. Ger. Historian, Publicist and Critic.... | 1800.. | 1869 |
| **Hubner**, Otto. Ger. Statistician and Political Economist..... | 1818.. | 1877 |
| **Hudson**, Frederick. Journalist. (*History of Journalism in America.*)..... | 1819.. | 1875 |
| **Hudson**, George. English "Railway King."..... | 1801.. | 1871 |
| **Huet**, Paul. French Landscape Painter..... | 1804.. | 1869 |
| **Hugel**, Karl Alexander Anselm. Austrian Traveller and Naturalist..... | 1796.. | 1870 |
| **Hughes**, Ball. Sculptor..... | 1806.. | 1868 |
| **Hugo**, Madame Adèle Foucher. Wife of Victor Hugo..... | 1806 ?. | 1868 |
| **Hugo**, Charles Victor. Journalist and Author..... | 1826.. | 1871 |
| **Hugo**, François. Son of Victor Hugo. Translator of Shakespeare..... | 1828.. | 1873 |

| | BORN | DIED. |
|---|---|---|
| **Hulsemann**, John George, Chevalier de. Austrian Minister to United States | — | 1864 |
| Hulsse, Julius Ambrosius. German Scientist. | 1812 | 1876 |
| Humphrey, James. American Lawyer and M. C. | 1811 | 1866 |
| Hungerford, William, LL. D. American Jurist. | 1786 | 1873 |
| Hunt, Edward B. American Military Officer; Inventor. | 1822 | 1863 |
| Hunt, Frederick Knight. Journalist. | 1814 | 1854 |
| Hunt, George Ward. British Statesman. | 1825 | 1877 |
| Hunt, James. English Physiologist and Anthropologist. | 1833 | 1869 |
| Hunt, Thornton Leigh. English Artist, Critic, Journalist. | 1810 | 1873 |
| Hunt, William Morris. American Artist. | 1824 | 1879 |
| Hupfeld, Hermann. German Hebrew Scholar | 1796 | 1866 |
| Hurlstone, Frederick Yeates. English Historical Painter. | 1800 | 1869 |
| Hussein-Aoni Pasha. Turkish Statesman and General. | 1819 | 1876 |

## I.

| | | |
|---|---|---|
| **Ingersoll, Joseph Reed.** Am. Statesman and Diplomatist. | 1786 | 1868 |
| Ingersoll, Ralph Isaacs. Am. Statesman and Diplomatist. | 1788 | 1872 |
| Ingham, Charles C. American Portrait Painter. | 1797 | 1863 |
| Inglis, John A. American Jurist. | 1813 | 1878 |
| Ingres, Jean Dominique Auguste. Fr. Historical Painter. | 1781 | 1867 |
| Irving, Ebenezer. American Merchant. Brother of Washington Irving | 1775 | 1868 |
| Irving, J. Beaufrain. American Painter. | 1827? | 1877 |
| Irving, Pierre Monroe. American Writer. | 1802 | 1876 |
| Isaacs, Samuel M. Jewish Rabbi and Editor | 1803 | 1878 |
| Iverson, Alfred. American Jurist and Statesman. | 1798 | 1873 |
| Ives, Eli, M. D. | 1779 | 1861 |
| Ives, Levi Silliman, D. D. Bishop of North Carolina. | 1797 | 1867 |

## J.

| | | |
|---|---|---|
| **Jackson, Abner.** Epis. Clerg. and Col. President. | 1811 | 1874 |
| Jackson, Claiborne F. American Secessionist; "Confederate" General. | 1807 | 1862 |
| Jackson, Conrad Feger. American General. | — | 1862 |
| Jackson, James S. American General. | 1822 | 1862 |
| Jackson, James. American Medical Professor and Author. | 1777 | 1867 |
| Jackson, John J. "Confederate" Brigadier-General. | 1829 | 1866 |
| Jackson, Samuel. American Physician and Author. | 1787 | 1872 |
| Jacobs, Melancthon, D. D. Luth. Clerg., Prof., Author. | 1806? | 1871 |
| Jacoby, Johann. German Politician. | 1805 | 1877 |
| Jahn, Otho. German Philologist. Archæologist, Critic. | 1813 | 1869 |
| James, Charles T. Inventor of Rifle-cannon and Shell. | 1806 | 1862 |
| Jameson, Charles Davis. American General. | 1827 | 1862 |
| Janes, Rev. Edward L. Methodist Clergyman and Author. | 1807 | 1875 |
| Janin, Jules Gabriel. French Critic and Novelist. | 1804 | 1874 |
| **Jelf, Richard William.** English Author and Teacher. | 1798 | 1871 |

| | BORN. | DIED. |
|---|---|---|
| **Jenks, William.** American Cong. Clergyman and Author .... | 1778.. | 1866 |
| **Jerdan, William,** F. S. A. English Journalist..... | 1782.. | 1869 |
| **Jesse, Edward.** English Naturalist and Author..... | 1780.. | 1868 |
| **Jessup, Thomas S.** American Military Officer..... | 1790.. | 1860 |
| **Jessup, William.** American Jurist and Philanthropist..... | 1797.. | 1868 |
| **Jeune, Francis,** D. D. English Prelate and Reformer..... | 1800?. | 1868 |
| **Jewett, Charles Coffin.** American Scholar and Bibliographer. | 1816.. | 1868 |
| **Johnson, Andrew.** Seventeenth President of U. S..... | 1808.. | 1875 |
| **Johnson, Edward.** "Confederate" Major-General..... | — .. | 1873 |
| **Johnson, Rev. Herman M.** Amer. Clergyman and Author.... | 1815.. | 1868 |
| **Johnson, Reverdy.** American Statesman..... | 1796.. | 1876 |
| **Johnston, Alexander Keith.** British Geographer..... | 1804.. | 1871 |
| **Johnston, Alexander Keith.** Brit. Geographer and Explorer. | 1841.. | 1879 |
| **Jomini, Baron Henri.** Swiss Historian and Military Critic... | 1779.. | 1869 |
| **Jones, Ernest.** English Journalist, Reformer, Orator..... | 1819.. | 1869 |
| **Jones, George.** Episcopal Clergyman and Author... ..... | 1799.. | 1870 |
| **Jones, George,** R. A. English Painter. (*Battle of Waterloo.*). | 1786.. | 1869 |
| **Jones, Henry Bence,** M. D. English Medical Writer. (*Life and Letters of Faraday.*)..... | 1814.. | 1873 |
| **Jones, John N.** "Confederate" General..... | 1820.. | 1864 |
| **Jones, Dr. Joseph S.** American Dramatist..... | 1809.. | 1877 |
| **Jones, Mrs. Melinda.** American Actress..... | 1815.. | 1875 |
| **Jones, Roger.** American General..... | — .. | 1852 |
| **Josephine.** Ex-Queen of Sweden..... | 1807.. | 1876 |
| **Juarez, Benito.** Mexican Statesman and President..... | 1807.. | 1872 |
| **Jubinal, Michel Louis Achille.** French Politician and Author. | 1810.. | 1875 |
| **Jukes, Joseph Bute.** Geologist and Writer..... | 1811.. | 1869 |
| **Julio, E. D. B.** Painter. (*Last Meeting of Lee and Stonewall Jackson.*)..... | 1843.. | 1879 |
| **Juncker, Henry Damian,** D. D. Roman Catholic Bishop..... | 1810?. | 1868 |
| **Junkin, George.** American Clergyman and Author..... | 1790.. | 1868 |
| **Juvara, Tommaso Aloysio.** Italian Artist..... | 1809.. | 1875 |

## K.

| | | |
|---|---|---|
| **Kamehameha V.** King of the Sandwich Islands..... | 1830.. | 1872 |
| **Kavanagh, Julia.** British Authoress..... | 1824.. | 1877 |
| **Karl XV., Louis Eugene.** King of Sweden..... | 1826.. | 1872 |
| **Kaulbach, Wilhelm von.** German Painter..... | 1805.. | 1874 |
| **Kaye, Sir John William.** British Statesman and Historian... | 1814.. | 1876 |
| **Kean, Charles John,** F. S. A., F. R. G. S. English Actor..... | 1811.. | 1868 |
| **Kearny, Lawrence.** American Naval Officer..... | 1789.. | 1868 |
| **Keble, John.** English Clergyman and Poet..... | 1792.. | 1866 |
| **Keeler, Ralph.** American Writer. (*Vagabond Adventures.*).. | 1840.. | 1873 |
| **Keeley, Robert.** English Comedian..... | 1794.. | 1869 |
| **Keene, Laura.** American Actress..... | 1830.. | 1873 |
| **Keightley, Thomas.** English Historian and Classical Writer. | 1789.. | 1872 |
| **Keim, Theodor.** German Theologian and Historian..... | 1825.. | 1878 |
| **Keim, William H.** American General..... | 1813.. | 1862 |
| **Keiser, Dr.** German Writer..... .... | 1779.. | 1862 |

| | BORN. | DIED. |
|---|---|---|
| Keitt, Lawrence M. American Politician and Secessionist | 1824 | 1864 |
| Kellum, John. American Architect | 1809 | 1871 |
| Kelsieff, Basil Ivanovitch. Russian Revolutionary Writer | 1835? | 1872 |
| Kemeny, Sigmund, Baron. Hungarian Author | 1816 | 1875 |
| Kendall, Amos. American Statesman and Publicist | 1789 | 1869 |
| Kendall, George Wilkins. American Journalist | 1807 | 1867 |
| Kennedy, John Pendleton. Amer. Statesman and Author | 1795 | 1870 |
| Kent, William. American Jurist | 1802 | 1861 |
| Kensett, John Frederick. American Landscape Painter | 1818 | 1872 |
| Kernot, Henry. Amer. Bookseller. (*Bibliotheca Diabolica.*) | 1806 | 1874 |
| Kerr, Michael C. American Politician | 1827 | 1876 |
| Kettell, Samuel. Amer. Journalist and Miscellaneous Writer. | 1800 | 1855 |
| Khanikoff, Nicholas de. Russian Orientalist | 1819 | 1878 |
| Kidd, William. Eng. Naturalist. (*Book of Brit. Song Birds.*) | 1803 | 1867 |
| Kiernan, James L. Brigadier-General, U. S. Vols | 1837 | 1869 |
| Kindler, Albert. German Painter | 1833 | 1876 |
| King, Charles, LL. D. American Journalist and Col. Pres | 1789 | 1867 |
| King, John Alsop. American Statesman | 1788 | 1867 |
| King, Jonas. American Cong. Clergyman and Missionary | 1792 | 1869 |
| King, Richard John. English Author and Antiquarian | — | 1879 |
| King, T. Butler. American Politician and Secessionist | 1804 | 1864 |
| Kingdom, John M. American Dramatic Writer | — | 1876 |
| Kingsley, Rev. Calvin. Bishop of Meth. Epis. Church | 1812 | 1870 |
| Kingsley, Charles. English Clergyman and Novelist | 1819 | 1875 |
| Kingsley, Henry. British Journalist and Novelist | 1830 | 1876 |
| Kirk, Edward N. American General | — | 1863 |
| Kirk, Edward Norris, D. D. American Pulpit Orator | 1802 | 1874 |
| Klein, Johan Adam. German Painter | 1792 | 1875 |
| Klein, Julius Leopold. German Dramatist and Literary Historian | 1804 | 1876 |
| Knapp, Rev. Jacob. American Evangelist | 1800 | 1874 |
| Knight, Charles. Eng. Author and Publisher. (*Popular History of England.*) | 1791 | 1873 |
| Knight, Dr. Jonathan. Professor of Surgery | 1789 | 1864 |
| Koch, H. A. German Classical Scholar | 1829 | 1876 |
| Kock, Charles Paul de. French Novelist and Dramatist | 1794 | 1871 |
| Koerle, B. German Painter | 1823 | 1875 |
| Kohl, Dr. Johan George. Ger. Traveller and Antiquary | 1808 | 1878 |
| Kraas, Karl Nicolaus. German Writer on Agriculture | 1810. | 1875 |
| Kraft, Henry, PH. D. German Chemist | 1801 | 1868 |
| Krauth, Charles P. Amer. Luth. Clerg. and Col. Pres | 1796 | 1867 |
| Krebs, John Michael, D. D. American Pres. Clergyman | 1804 | 1867 |
| Kreling, Dr. August von. Painter and Sculptor | 1819 | 1876 |
| Kremer, Joseph. German Philosopher. (*System der Philosophie.*) | 1808 | 1875 |
| Kriegk, Georg Ludwig. German Historian | | |
| Krug, Anna Charlotte. German Authoress | 1805 | 1877 |
| Kruger, K. W. German Classical Scholar | 1796 | 1876 |
| Krummacher, Friedrich Wilhelm. Prussian Preacher and Author | 1797 | 1868 |
| Kuh, Emil. German Poet and Critic | 1828 | 1876 |

| | BORN. | DIED. |
|---|---|---|
| Kühner, Raphael. German Philologist | 1802 | 1878 |
| Kurtz, Heinrich, PH. D. German Professor and Author | 1805 | 1873 |

## L.

| | | |
|---|---|---|
| Laborde, Léon Emanuel Simon Joseph, Compte de. Archæologist and Traveller | 1807 | 1869 |
| La Borde, Maximilian. Amer. Physician and Writer | 1804 | 1873 |
| Lacunza, José Maria. Mexican Statesman and Poet | 1809? | 1869 |
| Lafont, Rev. Father Annet. American Clergyman | 1812 | 1875 |
| Lafont, Pierre Cheri. French Actor | 1801 | 1873 |
| Laing, David. Scotch Antiquarian and Bibliographer | 1792 | 1878 |
| La Marmora, Alfonso di, Marquis. Italian General | 1804 | 1878 |
| Lamartine, Alphonse Marie Louis de. Poet, Historian and Statesman | 1790 | 1869 |
| Lamballe, Antoine Joseph Joubert de. Surgeon and Author. | 1799 | 1867 |
| La Mountain, John. American Aeronaut | 1829 | 1870 |
| Lander, Miss Sarah W. (*Spectacles for Young Eyes.*) | — | 1872 |
| Landseer, Charles. Eng. Painter. Brother of Sir Edwin L. | 1799 | 1879 |
| Landseer, Sir Edwin, R. A. English Painter | 1802 | 1873 |
| Lane, Edward William. British Orientalist | 1801 | 1876 |
| Lang, Heinrich. German Theologian | 1826 | 1876 |
| Langdon, Leander W. American Inventor | 1833 | 1875 |
| Lange, Albert. German Political Agitator | 1801 | 1869 |
| Langsdorff, George Frederick, Baron von. Bot. and Trav. | — | 1852 |
| Lanters, Paul. Belgian Painter in Water Colors | 1806 | 1875 |
| Lapham, Increase A. American Scientist | 1811 | 1875 |
| Lariviere, Pierre Charles. French Painter | 1798 | 1876 |
| Larochejaquelein, Henri du Virgier, Marquis de. French Senator | 1804 | 1867 |
| Laroche, Benj. Fr. Transl. of Shakespeare and Byron | 1798 | 1852 |
| Larousse, Pierre. Fr. Journalist and Educational Writer | 1817 | 1875 |
| Lassen, Christian. Orientalist | 1800 | 1876 |
| Lathrop, John H. Amer. Scholar and College President | 1799 | 1866 |
| Latour, Isidore. French Dramatic Author | 1809? | 1877 |
| Lauder, James Eckford. Figure Painter. (*Ten Virgins.*) | 1812 | 1869 |
| Lauder, Robert Scott. Scotch *Genre* Painter | 1803 | 1869 |
| Launitz, Robert E. American Sculptor | 1806 | 1870 |
| Launitz. Sculptor. (*Statue of Guttenberg.*) | 1795 | 1869 |
| Laurentie, Pierre Sébastien. French Author and Journalist, | 1793 | 1876 |
| Lauzanne de Vaux-Roussel, Augustin Théodore, Chevalier de. Vaudevilliste | 1805 | 1877 |
| Lawrence, George Alfred. British Lawyer and Author. (*Guy Livingstone.*) | 1827 | 1876 |
| Lawrence, John Laird Mair, Baron. British Statesman | 1811 | 1879 |
| Lawrence, Sir William. Sergeant-Surgeon to the Queen. | 1783 | 1867 |
| Laycock, Thomas. British Physician and Author. (*The Mind and Brain.*) | 1812 | 1876 |
| Leavitt, Rev. Joshua. American Journalist and Author | 1784 | 1873 |
| Ledru-Rollin, Alexandre Auguste. French Statesman | 1807 | 1874 |

BORN. DIED.

**Lee, John.** English Physicist..... 1783..1866
**Lee, Robert Edward.** American Soldier and Educator..... 1807..1870
**Leeser, Isaac.** Jewish Rabbi and Author..... 1806..1868
**Le Fanu, Joseph Sheridan.** Irish Novelist..... 1814..1873
**Lefevre, Andre.** French Writer and Poet..... 1834..1873
**Leland, Henry Perry.** American Author..... 1828..1868
**Lemaitre, Frédérick.** French Actor..... 1798..1876
**Lemon, Mark.** English Dramatist and Editor..... 1809..1870
**Leo, Heinrich.** German Historian..... 1799..1878
**Leonhardi, Hermann Karl.** German Philosopher..... 1809..1875
**Leopold II., Jean Joseph Ferdinand Charles, ex-Grand Duke of Tuscany**..... 1797..1870
**Leroux, Pierre.** French Philosopher and Political Economist, 1798..1871
**Leroy de Saint Arnaud, Louis Adolphe.** French Senator and Jurist..... 1802..1873
**Lespes, Napoléon.** French Author..... 1805..1875
**Leutza, Emanuel.** Historical Painter. (*Washington Crossing the Delaware.*)..... 1816..1868
**Lever, Charles James.** Irish Novelist..... 1806..1872
**Leverrier, Urbain Jean Joseph.** French Astronomer..... 1801..1877
**Levy, Michel.** French Publisher..... 1821..1875
**Lewes, George Henry.** English Philosopher and Critic. (*Problems of Life and Mind.*)..... 1817..1878
**Lewestam, Fryderyk Henryk.** Polish Journalist and Author, 1817..1879
**Lewis, Mrs. Harriet.** American Authoress..... 1841..1878
**Lewis, John Frederick.** British Artist..... 1805..1876
**Lewis, Tayler.** Amer. Writer. (*Six Days of Creation.*)..... 1802..1877
**Leys, Jean Auguste Henri.** Belgian Painter..... 1815..1869
**Liebig, Baron Justus von.** Chemist and Scientist..... 1803..1873
**Ligier, Pierre.** French Tragedian..... 1797..1872
**Lincoln, Heman.** American Philanthropist..... 1779..1869
**Lincoln, Levi,** LL. D. American Statesman and Jurist..... 1782..1868
**Lindblad, Adolf Fredrik.** Swedish Composer..... 1801..1878
**Lindsay, James B.** Scottish Linguist..... 1800. 1862
**Linderman, Dr. Henry R.** Superintendent of the U. S. Mint. 1825..1879
**Lindsley, Nathan L.,** LL. D. American Philologist..... 1816..1868
**Lisgar, John Young, Baron.** British Statesman..... 1807..1876
**Littell, Eliakim.** Founder of *Littell's Living Age*..... 1797..1870
**Little, Charles C.** American Publisher..... 1799..1869
**Little, Henry.** "Confederate" General..... 1818..1862
**Littrow, Karl Ludwig von.** Austrian Astronomer..... 1811..1877
**Livingston, Rev. David.** Physician, Missionary, African Explorer..... 1817?..1873
**Locke, John,** M. D. American Geologist..... 1792..1856
**Locke, Richard Adams.** American Author and Journalist.... 1800..1871
**Lohde, Dr. George.** German Naturalist..... — ..1875
**Lohr, Emil.** German Landscape Painter..... 1809..1876
**Lomenie, Louis Léonard de.** French Scholar..... 1818..1878
**Longley, Charles Thomas.** Archbishop of Canterbury..... 1794..1868
**Longman, William.** British Publisher..... — ..1877
**Longstreet, Augustus Baldwin.** American Jurist and Author. 1790..1870

| | BORN. | DIED. |
|---|---|---|
| **Longworth**, Nicholas. American Vintner | 1782.. | 1863 |
| **Lonsdale**, Rev. John. English Prelate and Scholar | 1788.. | 1867 |
| **Loomis**, Gustavus. Brevet Brigadier-General, U. S. A | 1789. | 1872 |
| **Lopez**, Francisco Solano. President of Paraguay | 1831.. | 1870 |
| **Lord**, Daniel, LL. D. American Lawyer | 1795.. | 1868 |
| **Lord**, J. K. English Naturalist and Author | 1817.. | 1872 |
| **Lord**, Nathan, D. D. American Clergyman and Educator | 1798.. | 1870 |
| **Loring**, Frederick W. American Journalist and Author | 1846.. | 1871 |
| **Lough**, John Graham. British Sculptor | 1805.. | 1876 |
| **Lovelace**, Ada Augusta, Countess of. Only Child of Lord Byron. "Sole daughter of my house and heart." | 1815.. | 1852 |
| **Lovell**, Charles S. Brevet Brigadier-General, U. S. A | 1812.. | 1871 |
| **Lover**, Samuel. Irish Artist, Novelist and Composer | 1797. | 1868 |
| **Low**, Sampson, Jr. English Publisher and Author | 1823.. | 1871 |
| **Lowe**, James. Inventor of the Screw Propeller | — .. | 1866 |
| **Lowell**, Mrs. A. Cabbot. American Writer for Children | — .. | 1874 |
| **Lowrie**, Walter. American Statesman and Philanthropist | 1784.. | 1868 |
| **Lubbock**, Ellen Frances. Wife of Sir John L. (*Vacation Tourists.*) | 1835.. | 1879 |
| **Ludlow**, Fitzhugh. American Writer. (*Hasheesh Eater.*) | 1837.. | 1870 |
| **Ludwig** III. Grand Duke of Hesse | 1806.. | 1877 |
| **Lumpkin**, Joseph Henry. American Jurist and Statesman | 1799.. | 1867 |
| **Lunalilo** I. King of Sandwich Islands | 1835.. | 1874 |
| **Lutolf**, Prof. Alois. Swiss Historian | 1824.. | 1879 |
| **Lyell**, Sir Charles. British Geologist | 1797.. | 1875 |
| **Lyman**, Joseph Bardwell. Amer. Journalist, Agriculturist | 1829.. | 1872 |
| **Lytle**, William Haines. American General | 1826.. | 1863 |
| **Lytton**, Sir Edward George Earle Lytton Bulwer, Baron. Novelist, Poet, Dramatist | 1805.. | 1873 |

## M.

| | | |
|---|---|---|
| **Macbride**, John David. Oriental Scholar and Author | 1788.. | 1868 |
| **MacCook**, Robert L. American General | 1837.. | 1862 |
| **MacCulloch**, Horatio. Scotch Landscape Painter | 1806.. | 1867 |
| **Macdonald**, J. M. American Clergyman and Author | 1812.. | 1876 |
| **Macdonell**, James. English Journalist | 1842.. | 1879 |
| **MacGahan**, John Arthur. Journalist | 1842?. | 1878 |
| **Mackay**, Charles. Scotch Actor | 1787.. | 1857 |
| **Mackenzie**, Charles Kenneth. Writer | 1788.. | 1862 |
| **Mackinnon**, William Alexander. Author. (*History of Civilization.*) | 1789.. | 1870 |
| **Maclaren**, Charles. Geologist and Antiquarian | 1782.. | 1866 |
| **Macleod**, Norman, D. D. Scotch Clerg., Editor and Author | 1812.. | 1872 |
| **Maclise**, Daniel, R. A. British Painter | 1811.. | 1870 |
| **Macomb**, William H. American Commodore | 1820?. | 1872 |
| **Macready**, William Charles. English Tragedian | 1793.. | 1873 |
| **Madden**, Sir Frederick. English Antiquarian | 1801.. | 1873 |
| **Madou**, Jean Baptiste. Belgian Painter | 1796.. | 1877 |

| | BORN. | DIED. |
|---|---|---|
| **Maedler**, Johann Heinrich. German Astronomer | 1794 | 1874 |
| **Magne**, Pierre. French Imperialist | 1806 | 1878 |
| **Maguire**, John Francis. Irish Statesman and Writer | 1815 | 1872 |
| **Mahan**, Dennis Hart, LL. D. Military Teacher and Critic | 1802 | 1871 |
| **Mahoney**, Rev. Francis. Rom. Cath. Priest and Journalist | 1800? | 1866 |
| **Main**, Rev. Robert. English Astronomer | 1808 | 1878 |
| **Maitland**, Samuel Roffey, D. D. Writer | 1792 | 1866 |
| **Major**, John Richardson. English Clergyman and Author | 1797 | 1876 |
| **Malitourne**, M. French Author | 1795 | 1866 |
| **Mallefille**, Félician. French Dramatist | 1812 | 1868 |
| **Mallory**, Stephen R. American Political Leader | 1810 | 1873 |
| **Malmstroem**, or **Malstrom**, B. Elis. Swedish Poet and Writer | 1816 | 1865 |
| **Manly**, Basil, D. D. American Clergyman and Author | 1798 | 1868 |
| **Mangum**, Willie P. American Statesman | 1792 | 1861 |
| **Mann**, Abijah, Jr. American Politician | 1793 | 1868 |
| **Manning**, William Oke. English Merchant and Writer on International Law | 1809 | 1878 |
| **Mansel**, Henry Longueville, D. D. (*Philosophy of the Conditioned.*) | 1820 | 1871 |
| **Mansfield**, Joseph King Fenno. American General | 1803 | 1862 |
| **Manzoni**, Count Alessandro. Italian Poet and Novelist | 1784 | 1873 |
| **March**, Alden. American Surgeon and Medical Professor | 1795 | 1869 |
| **Marchi**, Father. Italian Archæologist | — | 1860 |
| **Marguerittes**, Julie de. (Mrs. Rea.) American Authoress | 1815 | 1866 |
| **Maria**. Grand Duchess of Russia | 1819 | 1876 |
| **Maria Christina**. Queen Dowager of Spain | 1806 | 1878 |
| **Maria de las Mercedes**. Queen of Spain | 1860 | 1878 |
| **Maria da Gloria**. Queen of Portugal | 1819 | 1853 |
| **Maria**. Ex-Queen of Saxony | 1805 | 1877 |
| **Maria**. Ex-Queen of Spain | 1847 | 1876 |
| **Marie-Joseph I., John Nepomucene**. King of Saxony | 1801 | 1873 |
| **Marie**, Louise Alexandrine, Princess of Prussia | 1808 | 1877 |
| **Marocchetti**, Baron Charles. French Sculptor | 1805 | 1867 |
| **Marsh**, Rev. John. American Clergyman and Reformer | 1788 | 1868 |
| **Marsh**, Samuel. American Clergyman. (*Uncle Ned.*) | 1796 | 1874 |
| **Marshall**, Thomas Alexander, LL. D. American Judge | 1794 | 1871 |
| **Marshall**, Thomas W. American Painter | 1850 | 1874 |
| **Martin**, John. Irish Agitator and Politician | 1812 | 1875 |
| **Martin**, Dr. John. Port. Meteorologist and Author | 1779 | 1869 |
| **Martin**, M. Edouard. French Dramatic Writer | 1827 | 1866 |
| **Martin**, Konrad. German Bishop and Author | 1812 | 1879 |
| **Martin**, Nicolas. French Poet | 1814 | 1877 |
| **Martineau**, Harriet. English Authoress. Autobiography; Memorials by M. W. Chapman | 1802 | 1876 |
| **Marx**, Karl, PH. D. German Revolutionist | 1818 | 1871 |
| **Mason**, Charles Kemble. American Actor | 1800? | 1875 |
| **Mason**, Francis, D. D. Missionary and Scientist | 1799 | 1874 |
| **Mason**, J. L. American Military Engineer | — | 1853 |
| **Mason**, James Murray. American Senator and Diplomatist | 1797 | 1871 |
| **Mason**, John Y. American Statesman and Diplomatist | 1795 | 1859 |

| | BORN. | DIED. |
|---|---|---|
| **Mason, Lowell, Mus. Doc.** Amer. Composer and Author | 1792 | 1872 |
| **Massie, James William.** Clergyman, Missionary and Author. | 1799 | 1869 |
| **Mathews, Charles James.** English Actor | 1803 | 1878 |
| **Mattei, Marius.** Roman Catholic Cardinal | 1792 | 1870 |
| **Matthiessen, Augustus, PH. D.** Chemist | 1831 | 1870 |
| **Mattison, Rev. Hiram.** American Clergyman and Author | 1811 | 1868 |
| **Matzerath, Joseph.** German Poet | 1813 | 1876 |
| **Mauch, Karl.** German Explorer | 1837 | 1875 |
| **Maurice, John Frederick Denison.** Eng. Clerg. and Author | 1805? | 1872 |
| **Maury, Matthew Fontaine.** Am. Hydrographer and Physicist | 1806 | 1873 |
| **Maximilian, Alexander Philipp.** German Naturalist | 1782 | 1867 |
| **Maxwell, Caroline Elizabeth Sarah.** *Mrs. Norton.* English Authoress | 1808 | 1877 |
| **Maxwell, Sir William Stirling.** English Historian | 1818 | 1878 |
| **May, Samuel Joseph.** American Clergyman and Reformer | 1798 | 1871 |
| **May, William.** United States Naval Officer | 1815 | 1861 |
| **Mayer, Col. Brantz.** American Historical Writer. (*Mexican Antiquities.*) | 1809 | 1879 |
| **Mayer, Julius Robert von.** German Physicist | 1814 | 1878 |
| **Mayhew, Augustus Septimus.** English Writer | 1812 | 1875 |
| **Mayhew, Henry.** English Author and Reformer | 1812 | 1872 |
| **Maynadier, Henry E.** Brevet Major-General, U. S. A | 1830 | 1868 |
| **Maynadier, William.** Brevet Brigadier-General, U. S. A | 1806 | 1871 |
| **Mayo, Joseph.** American Lawyer. (*Mayo's Guide.*) | 1795 | 1872 |
| **Mazzini, Giuseppe.** Italian Reformer and Statesman | 1808? | 1872 |
| **McAlester, Miles D.** Brevet Major-General, U. S. A | 1835 | 1869 |
| **McCabe, Rev. Dr. James D.** American Episcopal Clergyman. | 1808 | 1875 |
| **McCall, George Archibald.** Brigadier-General, U. S. Vols | 1802 | 1868 |
| **McCarson, Michael.** Roman Catholic Clergyman | 1804 | 1867 |
| **McClintock, Rev. John.** Clergyman, Professor, Author | 1814 | 1870 |
| **McCluney, William J.** American Naval Officer | — | 1864 |
| **McFerran, John C.** Brevet Brigadier-General, U. S. A | 1820 | 1872 |
| **McGee, Thomas Darcy.** Irish Politician and Journalist. (*Lives of Irish Writers and Popular History of Ireland.*) | 1825 | 1868 |
| **McGrigor, Sir James.** Surgeon and Writer | 1772 | 1858 |
| **McGuffey, William H.** Amer. Clergyman and Col. President. | 1800 | 1873 |
| **McIlvaine, Charles Pettit.** Protestant Episcopal Bishop | 1798 | 1873 |
| **McKean, William W.** United States Naval Officer | 1801 | 1865 |
| **McKim, James Miller.** Clergyman and Anti-Slavery Leader | 1810 | 1874 |
| **McLeod, Rev. Xavier Donald.** American Writer | 1821 | 1865 |
| **McVickar, Rev. John, D. D.** Professor and Author | 1786 | 1868 |
| **Meade, George Gordon.** Major-General, U. S. A | 1815 | 1872 |
| **Meagher, Thomas Francis.** Irish Orator, and Brigadier-General, U. S. Vols | 1823 | 1867 |
| **Medwin, Thomas.** English Army Officer. (*Conversations with Lord Byron.*) | 1779 | 1869 |
| **Mehemet Ali Pasha.** Turkish General | 1830? | 1878 |
| **Meigs, Charles D.** American Physician and Author | 1792 | 1869 |
| **Meinicke, Karl Eduard.** German Geographer | 1803 | 1876 |
| **Meline, James F.** American Soldier and Author | 1813 | 1873 |
| **Mellin, Henrik.** Swedish Novelist | 1803 | 1876 |

| | BORN. | DIED. |
|---|---|---|
| **Melvill, Henry.** English Divine and Pulpit Orator | 1798 | 1871 |
| **Menken, Adah Isaacs.** Actress and Author | 1832 | 1868 |
| **Mensdorf-Pouilly, Count Alexander von.** Aust. Statesman | 1812 | 1872 |
| **Menzel, Wolfgang.** German Critic and Author | 1798 | 1873 |
| **Mercadante, Saveria.** Italian Musical Composer | 1798 | 1871 |
| **Meredith, Solomon.** American General | 1810 | 1875 |
| **Merimee, Prosper.** French Scholar and Dramatist | 1803 | 1870 |
| **Merivale, Herman.** English Publicist and Professor | 1806 | 1874 |
| **Merrick, Pliny, LL. D.** American Jurist | 1794 | 1867 |
| **Mery, M. Joseph.** French Novelist | 1799 | 1866 |
| **Metcalf, Theron, LL. D.** American Jurist | 1784 | 1875 |
| **Michelet, Jules.** French Historian and Essayist | 1798 | 1874 |
| **Mieroslawski, Ludwik.** Polish Revolutionist | 1814 | 1878 |
| **Miers, John.** British Botanist | 1789 | 1879 |
| **Miguel, Don Maria Evaristo.** Ex-King of Portugal | 1802 | 1866 |
| **Miles, Dixon H.** American Military Officer | 1803 | 1862 |
| **Mill, John Stuart.** Eng. Philosopher and Political Economist | 1806 | 1873 |
| **Millard, Louis Aimé.** French Musical Composer | — | 1871 |
| **Millaud, Moïse.** French Journalist and Banker | 1813 | 1871 |
| **Miller, Henry.** American Physician and Medical Writer | 1801 | 1874 |
| **Miller, James.** American Soldier | — | 1851 |
| **Miller, Morris S.** Brevet Brigadier-General, U. S. A | 1814 | 1870 |
| **Miller, Rev. Tobias Ham.** *Uncle Toby.* Journalist | 1802 | 1870 |
| **Miller, William Allen, M. D.** English Professor of Chemistry | 1817 | 1870 |
| **Millet, Jean François.** French Painter | 1815? | 1875 |
| **Mills, Abraham.** American Professor and Author | 1796 | 1867 |
| **Milman, Rev. Henry Hart.** Dean of St. Paul's. Poet, Critic, Dramatist, Historian | 1791 | 1868 |
| **Milman, Robert.** Bishop of Calcutta. Author | 1816 | 1876 |
| **Minturn, Robert Bowne.** Amer. Merchant and Philanthropist | 1805 | 1866 |
| **Miramon, Miguel.** Mexican General. Executed | 1830 | 1867 |
| **Mires, Jules.** French Adventurer, Journalist, Banker | 1809 | 1871 |
| **Mitchel, John.** Irish Revolutionist | 1815 | 1875 |
| **Mitchell, Edward.** English Sculptor | 1831 | 1872 |
| **Mitchell, John.** American Clergyman, Editor and Author | 1794 | 1870 |
| **Mitchell, S. Augustus.** Author of School Books | 1792 | 1868 |
| **Mohl, Julius von.** German Orientalist | 1800 | 1876 |
| **Mohl, Robert von.** German Jurist | 1799 | 1875 |
| **Molesworth, William Nassau.** Eng. Clergyman and Author | 1816 | 1877 |
| **Monnais, Edouard.** French Dramatic Author | 1798 | 1868 |
| **Monnier, Henri.** French Author and Artist | 1799 | 1877 |
| **Montagne, Jean François Camille.** French Physician | 1784 | 1866 |
| **Montague, Henry J.** English Actor | 1843 | 1878 |
| **Montalembert, Charles Forbes de Tyron, Comte de.** Publicist, Theologian, Writer | 1810 | 1870 |
| **Montebello, Napoleon Lannes, Duc de.** Diplomatist | 1801 | 1874 |
| **Montgomery, Wm. Reading.** Brigadier-General, U. S. Vols. | 1801 | 1871 |
| **Morehead, Charles S.** American Politician | 1802 | 1868 |
| **Morehead, James T.** American Statesman | 1796 | 1854 |
| **Morgan, Charles W.** American Naval Officer | 1790 | 1853 |
| **Morgan, George N.** Brevet Brigadier-General, U. S. Vols | — | 1866 |

| | BORN. | DIED. |
|---|---|---|
| **Morgan, John H.** "Confederate" Soldier | 1826 | 1864 |
| **Morgan,** John Minter. Philanthropist and Writer | 1783 | 1851 |
| **Morike,** Eduard. German Poet | 1804 | 1875 |
| **Morlot,** Francis Nicholas Madeleine. Archbishop of Paris. Theological Writer | 1795 | 1862 |
| **Morris,** George U. American Naval Commander | — | 1875 |
| **Morris,** Henry W. United States Naval Officer | 1805 | 1863 |
| **Morris,** Thomas A. Methodist Episcopal Bishop | 1794 | 1874 |
| **Morse,** Richard Cary. American Journalist | 1795 | 1868 |
| **Morse,** Samuel Finley Breese. Painter, Author, and Inventor of the Electric Telegraph | 1791 | 1872 |
| **Morse,** Sidney Edwards. American Journalist and Inventor | 1794 | 1871 |
| **Mortimer,** Mrs. English Authoress. (*Peep of Day Series.*) | 1802 | 1878 |
| **Morton,** Oliver Perry. American Statesman | 1823 | 1877 |
| **Moscheles,** Ignace. German Pianist and Composer | 1794 | 1870 |
| **Mosenthal,** Samuel Hermann. German Poet | 1821 | 1877 |
| **Motley,** John Lothrop. American Historian and Diplomatist. Life by O. W. Holmes | 1814 | 1877 |
| **Mott,** Valentine. American Surgeon and Writer | 1785 | 1865 |
| **Moulton,** Joseph W. American Historian and Legal Writer | 1789 | 1875 |
| **Mount,** William Sidney. American Artist | 1807 | 1868 |
| **Moustier,** Léonel, Marquis de. Statesman and Diplomatist | 1815 | 1869 |
| **Mower,** Joseph A. Brevet Major-General, U. S. A | — | 1870 |
| **Mozier,** Joseph. American Sculptor. (*The Prodigal Son.*) | 1812 | 1870 |
| **Mugge,** or Muegge, Theodore. German Novelist and Editor | 1806 | 1861 |
| **Muhlenberg,** William Augustus. Amer. Clerg. and Author | 1796 | 1877 |
| **Muller,** Johan Heinrich Jacob von. German Physicist | 1809 | 1875 |
| **Muller,** or Mueller, Jerome. German Scholar and Educational Writer | 1785 | 1861 |
| **Muller,** Niklas. German-American Poet | 1809 | 1875 |
| **Mullock,** John Thomas. Roman Catholic Bishop | 1806? | 1869 |
| **Munch-Bellinghausen,** Eligius Franz Joseph von. Baron. *Friedrich Halm.* Poet and Dramatic Author | 1806 | 1871 |
| **Munck,** Salomon. Semitic Scholar and Orientalist | 1807 | 1867 |
| **Mundt,** Clara, *née* Miller. *Louisa Mühlbach.* Novelist | 1814 | 1873 |
| **Mundt,** Theodore. German Writer | 1808 | 1861 |
| **Munroe,** Nathan. American Cong. Clergyman and Author | 1804 | 1866 |
| **Munzinger,** Werner. African Explorer | 1832 | 1875 |
| **Murat,** Napoléon Lucien, Prince | 1803 | 1878 |
| **Murat,** Theodore. French Novelist, Dramatist, Historian | 1808 | 1866 |
| **Murchison,** Charles. British Physician and Author | 1830 | 1879 |
| **Murchison,** Sir Roderick Impey. English Geologist and Geographer | 1792 | 1871 |
| **Murphy,** John K. American General | 1796 | 1876 |
| **Mustapha Fazyl Pasha.** Turkish Statesman | 1830 | 1875 |
| **Muzzey,** Reuben. American Surgeon and Author | 1780 | 1866 |
| **Myers,** Frederick. Brevet Brigadier-General, U. S. A | 1825 | 1874 |
| **Myers,** Mordecai. American Army Officer | 1776 | 1871 |

## N.

| | BORN. | DIED. |
|---|---|---|
| **Nadal, Rev. Bernard H.** American Professor and Author | 1815.. | .1870 |
| **Nagle, James.** Major-General, U. S. Vols | — .. | .1866 |
| **Napoleon III.** Charles Louis N. Bonaparte | 1808.. | .1873 |
| **Narvaez, Don Ramon Maria.** Spanish General | 1800.. | .1868 |
| **Naumann, Karl Friederich.** German Mineralogist | 1797.. | .1873 |
| **Neal, John.** American Author | 1793.. | .1876 |
| **Neale, John Mason.** Eng. Clergyman, Poet, Linguist, Author | 1818.. | .1866 |
| **Neher, Michael.** German Painter | 1798.. | .1876 |
| **Nelaton, Auguste.** French Physician | 1807.. | .1873 |
| **Nelson, Samuel,** LL. D. American Jurist | 1792.. | .1873 |
| **Newcomb, Harvey,** D. D. American Editor and Author | 1803.. | .1863 |
| **Newton, Mrs. Ann Mary.** English Artist | 1833. | .1866 |
| **Newton, Prof. Henry.** American Geologist | 1845.. | .1877 |
| **Niblo, William.** Theatrical Manager | 1789.. | .1878 |
| **Nichols, Edward W.** American Painter | 1820.. | .1871 |
| **Nichols, John Gough.** English Genealogist and Archæologist. (*Literary Anecdotes.*) | 1806.. | .1873 |
| **Nicol, Wm.** Natural Philos.; Inventor of *Nicol's Prism* | — .. | .1851 |
| **Nicollini, John Baptist.** Italian Sculptor | 1782.. | .1861 |
| **Niel, Adolphe.** Marshal of France | 1802.. | .1869 |
| **Niemeyer, Dr. Felix von.** (*Elements of Practical Medicine.*). | — .. | .1871 |
| **Niepce de St. Victor, Claude Marie Francois.** Chemist and Photographer | 1805.. | .1870 |
| **Nieritz, Karl Gustav.** German Writer | 1795.. | .1876 |
| **Nitzch, Gregory William.** German Philologist | 1790.. | .1861 |
| **Noble, Matthew.** English Sculptor | 1820.. | .1876 |
| **Noel, Baptist Wriothesley.** English Clergyman and Author | 1799.. | .1873 |
| **Noggerath, Jacob.** German Geologist | 1788.. | .1877 |
| **Nolan, Samuel B. B.** American Inventor | 1808.. | .1875 |
| **Norris, Edwin,** PH. D. English Ethnologist and Linguist | 1795.. | .1872 |
| **Northbrook, Francis T. Baring, Lord.** Statesman | 1796.. | .1866 |
| **Northen, Adolf.** German Painter | 1828.. | .1876 |
| **Nott, Eliphalet.** American Clergyman and Educator | 1773.. | .1866 |
| **Nott, Josiah Clark.** Amer. Ethnologist and Physiologist | 1804.. | .1873 |
| **Noyes, George Rapall.** Am. Clerg., Prof., and Orientalist | 1798.. | .1868 |

## O.

| | | |
|---|---|---|
| **Odilon-Barrot, Camille Hyacinthe.** French Statesman | 1791.. | .1873 |
| **O'Donnell, Daniel Kane.** Journalist and Author | 1842.. | .1871 |
| **O'Donnell, Leopold.** Count of Lucina, Marshal of Spain | 1809.. | .1867 |
| **Oelckers, Theodor.** German Scholar, Author and Radical | 1816.. | .1869 |
| **Ogden, William B.** American Philanthropist | 1805.. | .1877 |
| **Ogilvie, Robert Annesley.** British Statesman | 1807.. | .1879 |
| **Ohmuller, Franz Joseph.** German Botanist | 1797.. | .1875 |
| **Olney, Jesse.** American Author of School Text-Books | 1798.. | .1872 |

| | BORN. | DIED. |
|---|---|---|
| **Olozaga, Don Salustiano.** Spanish Statesman | 1803? | 1873 |
| **Omalino d'Halloy, Jean Baptiste Julien d'.** Belgian Geologist and Ethnologist | 1783 | 1875 |
| **O'Neill, John.** Irish Patriot | 1834 | 1878 |
| **Ord, George.** American Philologist and Naturalist | 1782 | 1866 |
| **Ormond, John Butler, Marquis of.** Writer | 1808 | 1854 |
| **Orr, James Lawrence.** American Statesman and Diplomatist. | 1822 | 1873 |
| **Orton, James.** American Naturalist | 1830 | 1877 |
| **Orton, Jason R.** American Physician, Poet and Editor | 1806 | 1867 |
| **Orton, Reginald.** Surgeon and Writer on Med. Subjects | 1810 | 1862 |
| **Osborn, Sherard.** British Naval Officer | 1822 | 1875 |
| **Osgood, Mrs. Helen Louise Gilson.** Philanthropist | 1835 | 1868 |
| **Ossorio, Juan Bautista.** Cuban Patriot and Martyr | 1839 | 1871 |
| **Otey, Rev. James Hervey.** *Good Bishop* | 1799 | 1863 |
| **Otho, Frederic Louis.** Ex-King of Greece | 1815 | 1867 |
| **Overbeck, Friedrich.** German Painter | 1789 | 1869 |
| **Owen, John Jason.** Greek Scholar and Author | 1803 | 1869 |
| **Owen, Robert Dale.** American Writer | 1801 | 1877 |
| **Owen, David Dale.** Geologist | 1807 | 1860 |
| **Oxenford, John.** British Dramatic Author | 1812 | 1877 |

## P.

| | | |
|---|---|---|
| **Pabst, Hermann, PH. D.** German Historian | — | 1870 |
| **Pacini, Giovanni.** Italian Composer | 1796 | 1867 |
| **Packer, Asa.** American Philanthropist | 1806 | 1879 |
| **Page, Charles Grafton.** Physicist and Author | 1812 | 1868 |
| **Paige, Alonzo Christopher.** American Jurist | 1797 | 1868 |
| **Palacky, Franz.** Bohemian Historian and Statesman | 1798 | 1876 |
| **Palikao, Charles Guillaume M. A. A. Cousin-Montauban, The Count de.** French Soldier | 1796 | 1878 |
| **Palladins, Archimandrite.** Russian Orientalist | — | 1879 |
| **Palmer, Christian von.** German Theologian | 1811 | 1875 |
| **Palmer, Mrs. Phoebe.** Evangelist, Missionary, Author | 1807 | 1874 |
| **Pangalos, M. Varnavas.** Modern Greek Patriot | — | 1855 |
| **Papineau, Louis Joseph.** Canadian Statesman | 1789 | 1871 |
| **Parepa-Rosa, Euphrosyne.** Operatic Singer | 1839 | 1874 |
| **Parisel, Dr. Francis.** French Communist | 1840 | 1877 |
| **Park, Roswell.** American Clergyman, Professor and Author. | 1807 | 1869 |
| **Parker, Col. Edward Griffin.** Politician and Author | 1826 | 1868 |
| **Parker, Joel.** American Clergyman and Author | 1799 | 1873 |
| **Parker, Prof. Joel.** American Jurist and Author | 1795 | 1875 |
| **Parker, John Henry.** English Publisher and Author. (*Glossary of Architecture.*) | 1806 | 1870 |
| **Parlatore, Filippo.** Italian Naturalist. (*Flora Italiana.*) | 1816 | 1877 |
| **Parsons, Usher.** Amer. Physician, Professor and Author | 1788 | 1868 |
| **Parton, Mrs. Sara Payson Willis.** *Fanny Fern.* American Author | 1811 | 1872 |
| **Passavant, John David.** Artist and Writer on Art | — | 1861 |

| | BORN. | DIED. |
|---|---|---|
| **Patmore**, Peter George. Writer | 1787 | 1855 |
| Patria, Henri Joseph Guillaume. French Scholar | 1798 | 1876 |
| Patterson, Francis P. American General | ... | ... |
| Paulding, Hiram. American Naval Officer | 1797 | 1878 |
| Paulding, Leonard. U. S. Naval Officer | 1826 | 1867 |
| Paxton, Edward F. "Confederate" General | — | 1863 |
| Payne, Joseph. British Educator | 1808 | 1876 |
| Peabody, George. Banker and Philanthropist | 1795 | 1869 |
| Peacock, Thomas Love. English Novelist and Poet | 1786 | 1866 |
| Pearce, James A. American Legislator | 1805 | 1862 |
| Pearson, George F. American Naval Officer | 1799 | 1867 |
| Peck, Ashel. American Jurist | 1803 | 1879 |
| Peck, John James. American General | 1821 | 1878 |
| Peet, Harvey Prindle. Instructor of Deaf Mutes | 1794 | 1873 |
| Pegram, William Johnson. "Confederate" General | 1841 | 1865 |
| Pelouze, Théophile Jules. French Chemist | 1807 | 1867 |
| Pennethorne, Sir James. English Architect | — | 1871 |
| Pender, William D. "Confederate" General | — | 1863 |
| Pennington, William. American Statesman | 1797 | 1862 |
| Perce, Elbert. Amer. Author and Inventor. (*The Battle Roll.*) | 1832 | 1869 |
| Perier, Auguste Casimir Victor Laurent. French Statesman | 1811 | 1876 |
| Perkins, George Roberts. American Author of Text Books | 1812 | 1876 |
| Perkins, Jonathan Cogswell. American Lawyer | 1809 | 1877 |
| Perkins, Samuel E. American Jurist | 1811 | 1879 |
| Perraud, J. J. French Sculptor. (*Adam; Despair.*) | 1821 | 1876 |
| Perrone, Giovanni. Italian Priest and Author | 1794 | 1876 |
| Persiani, Giuseppi. Italian Musical Composer | 1801 | 1869 |
| Persoz, Jean François. French Chemist | 1805 | 1868 |
| Perthes, Boucher de Crevecceur. Founder of the Science of Paleontology | 1788 | 1868 |
| Peschel, Oskar Ferdinand. German Geographer | 1826 | 1875 |
| Petermann, Dr. August. German Geographer | 1822 | 1878 |
| Peters, Absalom. Congregational Clergyman and Author | 1793 | 1869 |
| Peters, Adolf. German Mathematician and Poet | 1803 | 1876 |
| Peucker, Eduard von. German General | 1791 | 1876 |
| Pfleger-Moransky, Gustavus. Bohemian Poet | 1834 | 1875 |
| Pfyffer, Casimir. Swiss Lawyer and Writer | 1794 | 1875 |
| Phillip, John, R. A. English *genre* Painter | 1817 | 1867 |
| Phillips, Willard. American Jurist and Author | 1784 | 1873 |
| Picard, Louis Joseph Ernest. French Senator | 1821 | 1877 |
| Pichot, Amédée. French Author and Translator | 1796 | 1877 |
| Pickens, Francis W. American Politician | 1807 | 1869 |
| Pickering, Charles, M. D. American Naturalist and Author | 1805 | 1878 |
| Pickering, Octavius, LL. D. American Legal Writer | 1791 | 1868 |
| Pickersgill. British Painter | 1782 | 1875 |
| Pickett, George E. "Confederate" General | 1825 | 1875 |
| Pictet, François Jules. Swiss Naturalist | 1800? | 1872 |
| Pierce, Franklin. American Statesman and President | 1804 | 1869 |
| Pierpoint, John. Amer. Unit. Clergyman, Poet, and Author | 1785 | 1866 |
| Pilat, Ignatz A. Landscape Gardener | 1818 | 1870 |
| Pillow, Gideon Johnson. "Confederate" General | 1806 | 1878 |

| | BORN. | DIED. |
|---|---|---|
| **Pinckney**, Richard Shubrick. U. S. Naval Officer | 1797 | 1854 |
| **Pisaref**, Dimitry. Russian Philosopher and Essayist | 1840 | 1868 |
| **Pise**, Charles Constantine. Rom. Cath. Clergyman and Author. | 1802 | 1866 |
| **Pistorius**, Herman Alexander. Ger. Poet. (*Kulochke-Lied.*) | 1811 | 1877 |
| **Pius IX.**, Pope. (Giovanni Maria Fastai-Ferretti.) | 1792 | 1878 |
| **Plucker**, Julius, F. R. S. German Physicist and Author | 1801 | 1868 |
| **Plummer**, Joseph B. American General | 1822 | 1862 |
| **Pocci**, Count Franz. German Poet, Artist, Composer | 1807 | 1876 |
| **Poggendorff**, Johan Christian. German Scientist | 1796 | 1877 |
| **Pollard**, Edward A. American Journalist and Historian | 1827 | 1872 |
| **Pollard**, Henry Rives. American Journalist | 1833 | 1868 |
| **Poniatowski**, Joseph Michel Xavier François Jean. Musical Composer and French Senator | 1816 | 1873 |
| **Ponroy**, Pierre Gabriel Arthur. French Author | 1816 | 1876 |
| **Ponsard**, François. French Dramatist and Translator | 1814 | 1867 |
| **Poole**, Edward Stanley. English Linguist and Orientalist | 1831 | 1867 |
| **Poole**, John. English Dramatist and Author | 1792 | 1872 |
| **Porter**, Andrew. American Brigadier-General | 1820 | 1872 |
| **Porter**, David R. American Politician | 1788 | 1867 |
| **Porter**, John Addison. American Professor of Chemistry | 1822 | 1866 |
| **Porter**, Noah, D. D. American Congregational Clergyman | 1781 | 1866 |
| **Potgieter**, Everhard Johana. Dutch Poet. (*Florence*) | 1808 | 1875 |
| **Potter**, Chandler Eastman. American Editor and Author | 1807 | 1868 |
| **Potter**, Cipriani. British Musician and Composer | 1792 | 1871 |
| **Pouilat**, Claude Servais Mathias. Naturalist, Philosopher | — | 1868 |
| **Powell**, Lazarus W. American Politician | 1812 | 1867 |
| **Powell**, W. Byrd. American Medical Philosopher | 1799 | 1866 |
| **Powers**, Hiram. American Sculptor. (*Greek Slave.*) | 1805 | 1873 |
| **Pratt**, Rev. John Bennett. Scotch Antiquarian. (*Buchan; The Druids.*) | 1791 | 1869 |
| **Pray**, Isaac C. American Journalist and Dramatic Writer | 1813 | 1869 |
| **Preller**, Friedrich. German Painter | 1804 | 1878 |
| **Preller**, Louis. German Archæologist and Classical Scholar | 1809 | 1861 |
| **Prentice**, George Denison. American Journalist | 1802 | 1870 |
| **Prentiss**, Mrs. Elizabeth Payson. American Authoress | 1823 | 1878 |
| **Preston**, Ann, M. D. Physician and Professor | 1814 | 1872 |
| **Prevost-Paradol**, Lucien Anatole. French Publicist and Diplomatist | 1829 | 1870 |
| **Price**, Sterling. "Confederate" Major-General | 1809 | 1867 |
| **Prim**, Don Juan. Spanish General and Diplomatist | 1814 | 1870 |
| **Procter**, Bryan Waller. *Barry Cornwall.* English Poet | 1787 | 1874 |
| **Prossi**, Thomas. Italian Poet and Author | 1789 | 1854 |
| **Protet**, Augustus Leopold. French Admiral; African Explorer | 1809 | 1862 |
| **Prout**, Skinner. British Water-Color Artist | 1806 | 1876 |
| **Prutz**, Robert Ernest. German Poet, Historian and Novelist. | 1816 | 1872 |
| **Pulian**, Johann Gottfried. German Painter | 1809 | 1875 |
| **Putnam**, George Palmer. American Publisher and Author | 1814 | 1872 |
| **Pyne**, James B. English Landscape Painter | 1800 | 1870 |

## Q.

| | BORN. | DIED. |
|---|---|---|
| **Quartley, Frederick W.** American Engraver | 1808.. | 1875 |
| **Quetelet, Lambert Adolphe Jaques.** Belgian Astronomer and Statistician | 1796.. | 1874 |
| **Quincy, Edmund.** American Journalist and Author | 1808.. | 1877 |
| **Quinet, Edgar.** French Writer and Politician | 1803.. | 1875 |

## R.

| | | |
|---|---|---|
| **Raine, Rev. Canon.** English Antiquarian | 1804.. | 1878 |
| **Ramberg, Arthur Freihen von.** German Artist | 1809.. | 1875 |
| **Ramsay, Edward Bennerman.** Scot. Clergyman, and Author. | 1793.. | 1872 |
| **Randall, Alexander Williams.** Lawyer and U. S. Official | 1819.. | 1872 |
| **Randolph, Col. Thomas Jefferson.** (*Life and Correspondence of Thomas Jefferson*) | | |
| **Rankley, Alfred.** English Painter | 1820.. | 1872 |
| **Raphall, Morris Jacob.** Jewish Rabbi and Author | 1798.. | 1868 |
| **Raspail, François Vincent.** Fr. Naturalist and Revolutionist | 1794.. | 1878 |
| **Ratazzi, Marie Studolmine de Solins.** Writer | 1830.. | 1870 |
| **Rattazzi, Urbano.** Italian Statesman | 1808.. | 1873 |
| **Rau, Heribert.** German Novelist | 1813.. | 1876 |
| **Raudon, Jacques Louis Cesar Alexandre.** French Soldier and Statesman | 1795.. | 1871 |
| **Raumer, Friedrich Ludwig Georg von.** Historian | 1781.. | 1873 |
| **Raumer, Rudolph von.** German Philologist | 1815.. | 1876 |
| **Rauscher, Joseph Othmar, Ritter von.** Prince, Archbishop of Vienna | 1797.. | 1874 |
| **Rawlins, John A.** Major-General, U. S. Army | 1831.. | 1869 |
| **Ray, Joseph.** American Mathematician | 1807.. | 1855 |
| **Raymond, Henry Jarvis.** Amer. Jour., Editor, Author | 1820.. | 1869 |
| **Raymond, John H.** President of Vassar College | 1814.. | 1878 |
| **Read, Abner.** United States Naval Officer | — .. | 1863 |
| **Read, George Campbell.** American Admiral | — .. | 1862 |
| **Read, John Meredith.** American Jurist | 1797.. | 1874 |
| **Read, Thomas Buchanan.** American Poet and Painter | 1822.. | 1872 |
| **Reade, John Edmund.** English Poet | 1800.. | 1870 |
| **Reade, William Winwood.** British Explorer and Author | 1838.. | 1875 |
| **Redding, Cyrus.** English Journalist | 1785.. | 1870 |
| **Redfield, Isaac Fletcher.** American Jurist | 1804.. | 1876 |
| **Redgrave, Samuel.** British Art Historian | 1804.. | 1876 |
| **Reed, William Bradford.** American Lawyer and Writer | 1806.. | 1876 |
| **Regnault, Elias.** French Historian | 1801.. | 1868 |
| **Regnault, Henri Victor.** French Physicist | 1810.. | 1878 |
| **Reichenbach, Baron Carl von.** Naturalist, Chemist and Author | 1788.. | 1869 |
| **Reinhart, Karl August.** German Painter and Writer | 1818.. | 1877 |

| | BORN. | DIED. |
|---|---|---|
| **Reisach**, Charles Auguste, Count de. Cardinal Bishop | 1800 | 1869 |
| **Remusat**, François Marie Charles, Count de. Statesman and Author | 1797 | 1875 |
| **Rennie**, George. Eng. Engineer and Writer on Engineering. | 1791 | 1866 |
| **Renouard**, Anthony Augustin. French Bibliographer | 1765 | 1853 |
| **Renouard**, Rev. George Cecil. Eng. Geog. and Orientalist | 1780 | 1867 |
| **Renschle**, Karl Gustav. German Geographer | 1812 | 1875 |
| **Renshaw**, William B. United States Naval Officer | — | 1863 |
| **Revel**, Giovanni Pietri, D. D. Waldensian Clerg. and Bishop. | 1810 | 1871 |
| **Rianzares**, Fernando Munoz, Duque de. King-Consort of Marie Christina | 1810 | 1873 |
| **Richardson**, Albert Deane. Journalist and Author. (*Beyond the Mississippi.*) | 1833 | 1869 |
| **Richardson**, Edward. English Sculptor | 1812 | 1869 |
| **Richmond**, Dean. Amer. Political Manager and Capitalist | 1803 | 1866 |
| **Riley**, H. T. English Historical and Critical Writer | 1818 | 1878 |
| **Rinaldi**, Rinoldo. Italian Sculptor, Pupil of Canova | — | 1873 |
| **Rinehart**, William H. American Sculptor | 1827 | 1874 |
| **Ringgold**, Cadwalader. American Naval Officer | 1802 | 1867 |
| **Ripley**, Henry Jones. Amer. Clerg., Author and Professor | 1798 | 1875 |
| **Ripley**, James W. Brevet Major-General, U. S. A | 1794 | 1870 |
| **Ritchie**, Mrs. Anna Cora Mowatt. American Actress and Authoress | 1821? | 1870 |
| **Ritschl**, Friedrich. German Classical Scholar | 1806 | 1876 |
| **Ritter**, Heinrich. German Philosopher and Historian. (*Geschichte der Philosophie.*) | 1791 | 1869 |
| **Rives**, William C. American Statesman and Diplomatist | 1793 | 1868 |
| **Roberts**, B. S. Brevet Brigadier-General, U. S. A | 1811 | 1875 |
| **Robertson**, James Burton. British Scholar | 1800 | 1877 |
| **Robertson**, Joseph. Scottish Antiquarian | 1811 | 1866 |
| **Robertson**, Thomas William. English Actor and Author | 1829 | 1871 |
| **Robinson**, Henry Crabb. English Conversationalist. (*Diary.*) | 1775 | 1867 |
| **Robinson**, Horatio N. American Mathematician and Author. | 1806 | 1867 |
| **Robinson**, John Henry. English Line Engraver | 1796 | 1871 |
| **Robinson**, Mrs. Thérèse Albertine Louise. Author and Translator | 1797 | 1870 |
| **Robinson**, Thomas, D. D. Canon of Rochester. Prof. of Arabic. | 1790 | 1873 |
| **Robinson**, William S. *Warrington.* American Journalist | 1818 | 1876 |
| **Rodbertus**, Johann Karl. German Statesman | 1805 | 1875 |
| **Rodman**, Thomas J. Brevet Brigadier-General, U. S. A | 1820? | 1871 |
| **Roebling**, John Augustus. Civil Engineer | 1806 | 1869 |
| **Roebuck**, John Arthur. English Politician | 1802 | 1879 |
| **Rogers**, Henry Darwin. Prof. of Geology, Univ. of Glasgow. | 1809 | 1866 |
| **Roget**, Peter Mark, M. D. English Philologist and Author | 1779 | 1869 |
| **Rokitansky**, Karl von. Austrian Anatomist and Physiologist. | 1804 | 1878 |
| **Rolph**, John A. Artist, Landscape Engraver | 1798 | 1862 |
| **Romer**, Miss. English Operatic Singer | 1816 | 1868 |
| **Roon**, Albrecht Theodor Emil, Count von. Ger. Field Marshal. | 1803 | 1879 |
| **Roosevelt**, James I. American Judge | 1795 | 1875 |
| **Roosevelt**, Theodore. American Civilian | 1832 | 1878 |
| **Roscoe**, Thomas. English Author and Poet | 1791 | 1871 |

| | BORN. | DIED. |
|---|---|---|
| **Rose, Gustav, PH. D.** German Chemist and Mineralogist | 1798 | 1873 |
| **Rose, Henry John.** Archdeacon of Bedford, Author | 1800 | 1873 |
| **Roos, William Charles.** Miniature Painter | 1794 | 1860 |
| **Rosse, William Parsons, Earl of.** Astronomer and Physicist | 1800 | 1867 |
| **Rossini, Gioacchino Antonio.** Musical Composer | 1792 | 1868 |
| **Rossiter, Thomas P.** American Painter. (*Ruth and Naomi.*) | 1818 | 1871 |
| **Rothschild, Anselm, Baron.** Financier | 1773 | 1855 |
| **Rothschild, James, Baron.** Banker | 1792 | 1868 |
| **Rothschild, Lionel de, Baron.** Financier | 1808 | 1879 |
| **Rotscher, Dr. N. T.** German Writer | 1802 | 1871 |
| **Rouge, Oliver Charles Camille Emanuel, Viscount de.** French Archæologist | 1811 | 1873 |
| **Rous, Henry John.** British Admiral and Sportsman | 1795 | 1877 |
| **Rousseau, Lovell H.** Major-General, U. S. Vols | 1818 | 1869 |
| **Ruben, Christoph.** German Painter | 1805 | 1875 |
| **Ruckert, Heinrich.** German Historian | 1823 | 1875 |
| **Rude, Francis.** French Sculptor | 1784 | 1855 |
| **Ruggles, Edward.** American Physician and Artist | 1817 | 1867 |
| **Runeberg, Johan Ludwig.** Finnish Poet and Scholar | 1804 | 1877 |
| **Rush, James.** American Physician and Author. (*Philosophy of the Human Voice.*) | 1786 | 1869 |
| **Rusk, Thomas J.** American General and Statesman | 1803 | 1857 |
| **Russel, John, Earl.** English Statesman and Author | 1792 | 1878 |
| **Russel, William.** American Author of Text Books | 1798 | 1873 |
| **Rustow, Wilhelm.** German Military Writer | 1821 | 1878 |
| **Ryall, Thomas Henry.** English Historical Engraver | 1811 | 1867 |

## S.

| | | |
|---|---|---|
| **Sabine, Lorenzo.** American Author | 1803 | 1877 |
| **Sack, Karl Heinrich.** German Theologian | 1790 | 1875 |
| **Sacy, Samuel Ustazade Sylvestre de.** French Academician and Author | 1801 | 1879 |
| **Sadlier, Louise.** German Painter | 1780 | 1866 |
| **Sainte-Beuve, Charles Augustin.** French Poet, Critic, Academician and Senator | 1804 | 1869 |
| **Saint-Georges, Jules Henri Vernoy de.** Dramatic Author | 1801 | 1875 |
| **Salles, Eusebe François, Count de.** French Orientalist | 1797 | 1873 |
| **Salm-Salm, Prince Felix.** Austrian Nobleman and Brig.-Gen., U. S. A | 1828 | 1870 |
| **Saltoun, Alexander George Fraser, Lord.** Defender of Hougoumont | 1785 | 1853 |
| **Salvador, Joseph.** Jewish Historical Writer | 1796 | 1873 |
| **Sand, George.** (Amantine Lucille Aurore Dupin-Dudevant). French Novelist | 1804 | 1876 |
| **Sanders, William P.** American General | — | 1863 |
| **Sandhurst, William Rose Mansfield.** British General | 1819 | 1876 |
| **Sanford, John Langton.** British Historian | 1824 | 1877 |
| **Sanger, William W.** American Physician and Author | 1819 | 1872 |

| | BORN. | DIED. |
|---|---|---|
| San Miguel, Evaristo. Spanish Journalist, Statesman and Soldier | 1780.. | 1862 |
| Santa Anna, Antonio Lopez de. Mexican General | 1798.. | 1876 |
| Santini, Giovanni. Italian Astronomer | 1786.. | 1877 |
| Sargent, Lucius Manlius. Am. Author, Journalist, Reformer. | 1786.. | 1867 |
| Sartwell, Henry Packer. American Scientist. (*Exsiccatæ.*). | 1792.. | 1867 |
| Savage, James. American Archæologist | 1784.. | 1873 |
| Savage, John. American Jurist | 1779.. | 1863 |
| Savigny, Karl Frederich von. Prussian Diplomatist | 1814.. | 1875 |
| Schaeffer, Wilson. Brigadier-General, U. S. Vols | — .. | 1870 |
| Scheerer, Theodor. German Chemist and Geologist | 1813.. | 1875 |
| Schleicher, August. German Philologist and Author | 1821.. | 1868 |
| Schmid, Theodor. German Philologist | 1798.. | 1877 |
| Schmucker, Samuel S. American Theologian | 1799.. | 1873 |
| Schnaase, Karl. German Art Historian | 1798.. | 1875 |
| Schonbein, Christian. Chemist | 1779.. | 1868 |
| Schweitzer, Dr. J. B. von. German Socialist and Poet | 1834.. | 1875 |
| Scialoja, Antonio. Italian Statesman and Political Economist. | 1817.. | 1877 |
| Sclopis de Salerano, Paolo Federigo, Count. Italian Jurist. | 1798.. | 1878 |
| Scott, Sir George Gilbert. British Architect | 1811.. | 1878 |
| Scott, Winfield, LL. D. Brevet Lieutenant-General, U. S. A | 1786.. | 1866 |
| Scribner, Charles. American Publisher | 1820.. | 1871 |
| Scribner, John Blair. American Publisher | 1851.. | 1879 |
| Scroop, William. Writer | 1771.. | 1852 |
| Seaton, William Winston. American Journalist | 1785.. | 1866 |
| Secchi, Pietro Angelo. Italian Astronomer | 1818.. | 1878 |
| Sedgwick, Rev. Adam. English Geologist | 1786.. | 1873 |
| Sedgwick, Catharine Maria. Amer. Novelist and Essayist | 1789.. | 1867 |
| Sedley, William Henry. (W. H. Smith.) American Actor | 1806.. | 1872 |
| Seemann, Berthold, PH. D. German Scientist | 1825.. | 1871 |
| Sefton, John. English Actor | 1805.. | 1868 |
| Segur, Philippe Paul, Count de. General and Historian | 1780.. | 1873 |
| Seidl, Johann Gabriel. Austrian Poet and Archæologist | 1805.. | 1875 |
| Selby, Prideaux John. English Naturalist | 1789.. | 1867 |
| Selwin, William. English Clergyman and Author | 1806.. | 1875 |
| Selwyn, George Augustus. Bishop of Lichfield | 1809.. | 1878 |
| Semmes, Raphael. "Confederate" Naval Officer | 1809.. | 1877 |
| Seroff, Alexander Nikolaievitch. Musical Composer | 1821.. | 1871 |
| Sewall, Samuel. American Clergyman and Antiquarian | 1785.. | 1868 |
| Seward, William Henry, LL. D. American Statesman | 1801.. | 1872 |
| Seymour, Hezekiah C. American Civil Engineer | 1812.. | 1853 |
| Seymour, Thomas Hart. American Politician | 1808.. | 1868 |
| Shakespear, Sir Richmond Campbell. Military Officer | — .. | 1861 |
| Shamyl, "The Warrior-Prophet of the Caucasus" | 1797.. | 1871 |
| Sharps, Christian. Inventor of Sharps' Rifle | 1811.. | 1874 |
| Sheaffe, Sir Roger H. Military Officer | 1763.. | 1851 |
| Shenton, Henry Crawner. British Line Engraver | 1803.. | 1866 |
| Shepherd, Nathaniel G. American Poet and Journalist | 1835.. | 1869 |
| Shepley, George F. American Jurist | 1819.. | 1878 |
| Shere Ali, Ameer of Afghanistan | 1824.. | 1879 |
| Sherman, Thomas W. American General | 1813.. | 1879 |

| | BORN. | DIED. |
|---|---|---|
| Shields, James. American General | 1810.. | 1879 |
| Shilder-Shuldner, Jury Ivanovitch. Russian General | — .. | 1878 |
| Shimeall, Richard C. Clergyman and Author | 1803.. | 1874 |
| Shurtleff, Nathaniel Bradstreet, M. D. American Naturalist, Antiquary and Author | 1810.. | 1874 |
| Sibley, Henry H. "Confederate" General | 1815. | 1862 |
| Sidell, William H. Brevet Brigadier-General, U. S. A | 1810.. | 1873 |
| Siebold, Philip Franz von. German Botanist | 1796.. | 1866 |
| Sill, Joshua Woodrow. American General | 1831.. | 1862 |
| Simms, William Gilmore. American Poet and Novelist | 1806.. | 1870 |
| Simrock, Karl. German Poet and Author | 1802.. | 1876 |
| Singer, Isaac Merritt. American Inventor | 1811.. | 1875 |
| Skey, Frederick. English Medical Writer | — .. | 1872 |
| Skinner, George Ure. English Botanist | 1805.. | 1867 |
| Skinner, Thomas Harvey, D. D., LL. D. Professor and Author | 1791.. | 1871 |
| Slane, Baron William MacGukin de. Arabic Scholar | 1801.. | 1878 |
| Slaughter, William B. American Writer | 1798.. | 1879 |
| Sleeper, John S. American Editor | 1794.. | 1878 |
| Sleifeusand, Xavier. German Engraver | 1809.. | 1876 |
| Slemmer, Adam J. American General | 1828?. | 1868 |
| Slidell, John. American Politician and Diplomatist | 1793.. | 1871 |
| Sloat, John Drake. Rear-Admiral, U. S. N | 1780.. | 1867 |
| Smallwood, Charles. Canadian Astronomer | 1811.. | 1873 |
| Smith, Asa Dodge. Amer. Clergyman and College President | 1804.. | 1877 |
| Smith, Augustus William. American Methodist Clergyman | 1802.. | 1866 |
| Smith, Benjamin Franklin. Brevet Brig.-Gen., U. S. A | 1831.. | 1868 |
| Smith, Rev. Eli. American Missionary and Orientalist | 1801. | 1857 |
| Smith, Francis Gurney. American Physiologist and Author | 1818.. | 1878 |
| Smith, George. British Oriental Scholar | 1840.. | 1876 |
| Smith, George, D. D. English Preacher. (*History of Wesleyan Methodism.*) | 1800.. | 1868 |
| Smith, Gerrit. American Philanthropist and Statesman | 1797.. | 1874 |
| Smith, Henry Boynton. American Clergyman and Writer | 1815.. | 1877 |
| Smith, Major Henry. Eng. Antiquarian, Botanist and Actor | 1793.. | 1868 |
| Smith, James. Scottish Geologist and Author | 1782.. | 1867 |
| Smith, Joseph Mather. American Physician, Professor and Medical Writer | 1789.. | 1866 |
| Smith, Joseph R. Brevet Brigadier-General, U. S. A | 1802.. | 1868 |
| Smith, Morgan L. Major-General, U. S. Volunteers | 1818.. | 1874 |
| Smith, Prof. Nathan R. American Physician | 1797.. | 1877 |
| Smith, Persifer F. American General | — .. | 1858 |
| Smith, Seba. American Journalist and Author | 1792.. | 1868 |
| Smith, Toulmin. English Publicist and Scholar | 1816.. | 1869 |
| Smith, Wyndham. *The Assassin.* Son of Sydney S | — .. | 1872 |
| Smyth, Thomas A. American General | — .. | 1865 |
| Snowden, James Ross. American Numismatist | 1810.. | 1878 |
| Solger, Dr. Reinhold. Hungarian Patriot and Lecturer | — .. | 1866 |
| Somerset, Sir Henry. Lieutenant-General | 1794.. | 18[illegible] |
| Somerville, Mrs. Mary Fairfax. Authoress and Physicist. Life by Daughter | 1780.. | [illegible] |
| Sophia, Queen of the Netherlands | 1818.. | 1877 |

| | BORN. | DIED. |
|---|---|---|
| Sopwith, Thomas. English Geologist and Mining Engineer.. | 1803.. | 1879 |
| Soule, Rev. Joshua. Bishop of Southern Methodist Church.. | 1781.. | 1867 |
| Soule, Pierre. Politician and Diplomatist..... | 1800?. | 1870 |
| Soulie, Endore. French Writer..... | 1817.. | 1876 |
| South, Sir James. English Astronomer..... | 1785.. | 1867 |
| Sowerby, James de Carle. English Naturalist..... | 1787.. | 1871 |
| Spalding, Benedict Joseph. Roman Catholic Clergyman..... | 1810.. | 1863 |
| Spalding, Martin John. Roman Catholic Archbishop ..... | 1810.. | 1872 |
| Sparks, Jared. American Clergyman and Historian..... | 1789.. | 1866 |
| Spence, B. E. English Sculptor..... | — .. | 1866 |
| Spiers, Alexander, PH. D. French Philologist and Professor. | 1807.. | 1869 |
| Sprague, Charles. American Poet..... | 1791.. | 1875 |
| Sprague, John J. American General..... | 1810.. | 1878 |
| Sprague, William Buel. American Clergyman and Author... | 1795.. | 1876 |
| Spring, Gardiner. American Clergyman and Author..... | 1785.. | 1873 |
| Stahr, Adolf Wilhelm Theodor. German Scholar..... | 1805.. | 1876 |
| Stanger, William. Physician and Naturalist..... | — .. | 1854 |
| Stangford, P. E. A. Frederick William Smythe, Viscount. Orientalist and Philologist..... | 1825.. | 1869 |
| Stanhope, Philip Henry, Earl. English Historian, Essayist, Legislator ..... | 1805.. | 1875 |
| Stanley, Anthony Dumond. American Mathematician..... | 1812.. | 1853 |
| Stanley of Alderley, Edward John. English Statesman.... | 1802.. | 1869 |
| Stanton, Edwin M. American Statesman ..... ..... | 1814.. | 1869 |
| Steele, William. American Revolutionary Soldier..... | 1762.. | 1851 |
| Steers, George. American Naval Constructor..... | 1821.. | 1856 |
| Steinway, Englehard Heinrich. Piano Manufacturer..... | 1797.. | 1871 |
| Stephen, A. J. Lawyer and Writer..... | 1788.. | 1864 |
| Stephens, Mrs. Harriet Marion. Writer..... | 1823.. | 1858 |
| Stephens, Linton. American Jurist and Politician..... | 1823.. | 1872 |
| Stevens, John Austin. American Merchant and Banker..... | 1795.. | 1874 |
| Stevens, Thaddeus. American Statesman and Reformer..... | 1793.. | 1868 |
| Stevens, Walter H. "Confederate" Brigadier-General..... | 1827 ? | 1867 |
| Steward, Mrs. Isabella Travers. Eng. Novelist and Poetess. | 1807 ? | 1867 |
| Stewart, Alexander Turney. American Merchant..... | 1803.. | 1876 |
| Stewart, Charles. U. S. Naval Officer..... | 1779.. | 1869 |
| Stifter, Adalbert. German Novelist and Painter..... | 1806.. | 1868 |
| Stirling-Maxwell, Sir William. British Author..... | 1818.. | 1878 |
| Stockton, John D. American Journalist. (*Fox and Geese.*).. | 1836.. | 1877 |
| Stockton, Robert Field. American Naval Officer..... | 1796.. | 1866 |
| Stockton, Thomas Hewlings. American Clergyman, Author and Poet..... | 1808.. | 1868 |
| Stoever, Martin Luther, PH. D. Lutheran Clergyman, Professor and Author..... | 1820.. | 1870 |
| Stone, Horatio. American Sculptor..... | — .. | 1875 |
| Stone, William Oliver. American Portrait Painter..... | — .. | 1875 |
| Storrs, Richard Salter, Sr. American Clerg. and Journalist... | 1787.. | 1873 |
| Stoughton, Edwin H. Brigadier-General, U. S. Vols..... | — .. | 1869 |
| Stow, Baron. Baptist Clergyman and Author..... | 1801.. | 1869 |
| Strachan, John, D.D. Bishop of Toronto..... | 1778.. | 1867 |
| Strandberg, C. W. A. Swedish Poet..... | 1818.. | 1877 |

| | BORN. | DIED. |
|---|---|---|
| **Strodtman**, Dr. Adolf. German Poet and Translator. (*Life of Heine.*) | 1828 | 1879 |
| **Strong**, William K. Brigadier-General, U. S. Vols. | 1805 | 1867 |
| **Struensee**, Gustav von. *Gustav von See.* Novelist. | 1803 | 1875 |
| **Struve**, Gustave. German Revolutionist and Author | 1805 | 1870 |
| **Stuart**, Lady Louise. Last of the Stuarts | 1776 | 1875 |
| **Sturges**, Jonathan. American Merchant and Philanthropist. | 1801 | 1874 |
| **Sully**, Thomas. American Painter. (*Washington Crossing the Delaware.*) | 1783 | 1872 |
| **Sumner**, Charles, LL. D. American Statesman and Scholar. | 1811 | 1874 |
| **Susini**, Mrs. Isabella Hinckley. American Vocalist | — | 1862 |
| **Swain**, David Lowry. Amer. Statesman, Jurist and Educator. | 1801 | 1868 |
| **Swain**, William M. Founder of *Philadelphia Public Ledger and Baltimore Sun* | 1809 | 1868 |
| **Sweetser**, Henry Edward. American Journalist | 1837 | 1870 |
| **Swinhoe**, Robert. British Naturalist | 1836 | 1877 |
| **Symington**, W. Scottish Theological Writer | 1795 | 1862 |
| **Symons**, Jelinger Cookson. Writer | 1810 | 1864 |

## T.

| | | |
|---|---|---|
| **Tadolini**, Giovanni. Italian Musical Composer | 1793 | 1872 |
| **Talbot**, William Henry Fox. English Author | 1800 | 1877 |
| **Tallmadge**, Frederick Augustus. Amer. Jurist and Politician. | 1792 | 1869 |
| **Tappan**, John. American Merchant and Philanthropist | 1781 | 1871 |
| **Tatnall**, Josiah. "Confederate" Commodore | 1796 | 1871 |
| **Tattam**, Henry, D.D. English Theologian | 1796 | 1868 |
| **Tausig**, Karl. German Pianist and Composer | 1841 | 1871 |
| **Tay**, Charles H. Brevet Brigadier-General, U. S. Vols. | 1836 | 1871 |
| **Taylor**, Bayard. American Poet, Traveller, Journalist, Diplomatist | 1825 | 1878 |
| **Taylor**, James B., D.D. Baptist Clergyman and Author | 1804 | 1871 |
| **Taylor**, Richard. "Confederate" General. (*Destruction and Reconstruction.*) | 1826 | 1879 |
| **Taylor**, Samuel Harvey, LL. D. Amer. Scholar and Teacher. | 1807 | 1871 |
| **Taylor**, Thomas House. American Episcopal Clergyman | 1799 | 1867 |
| **Tellkampf**, Johann Ludwig. Ger. Writer on Political Econ. | 1808 | 1876 |
| **Tenny**, Prof. Sanborn. American Author of Text Books | 1827 | 1877 |
| **Tenny**, Sarah M. Brownson. American Authoress | 1839 | 1876 |
| **Terrill**, William R. American General | — | 1862 |
| **Teuffel**, Wilhelm Sigismund. German Classical Scholar | 1820 | 1878 |
| **Thalberg**, Sigismond. Pianist and Composer | 1812 | 1871 |
| **Thiboust**, Lambert. French Dramatist | 1826 | 1867 |
| **Thierry**, Amédée Simon Dominique. Historian | 1797 | 1873 |
| **Thiers**, Louis Adolphe. French Statesman. Ex-President of French Republic | 1797 | 1877 |
| **Thirlwall**, Connop. English Bishop. (*History of Greece.*) | 1797 | 1875 |
| **Tholuck**, Friedrich August Gobbreu. German Theologian | 1799 | 1877 |
| **Thomas**, George Henry. Major-General, U. S. A. | 1816 | 1870 |
| **Thomas**, George Housman. English Artist and Designer | 1824 | 1868 |

| | BORN. | DIED. |
|---|---|---|
| **Thomasius**, Gottfried. German Theologian | 1802.. | 1875 |
| **Thompson**, George. English Philanthropist and Reformer | 1804.. | 1878 |
| **Thompson**, Joseph P. American Clergyman and Author | 1819.. | 1879 |
| **Thompson**, Mortimer. *Doesticks.* Amer. Humorous Writer. | 1835. | 1875 |
| **Thomson**, Edward. Methodist Episcopal Bishop | 1810.. | 1870 |
| **Thornton**, John Wingate. American Lawyer and Author | 1818.. | 1878 |
| **Thornton**, Thomas. English Editor and Author | 1787.. | 1866 |
| **Thorpe**, Benjamin. English Philologist, Author, Translator. | 1808.. | 1870 |
| **Thorpe**, Thomas B. American Editor and Author | 1815.. | 1878 |
| **Thouvenel**, Edouard Antoine. French Statesman and Diplomatist | 1818.. | 1866 |
| **Thrasher**, John S. American Journalist | 1817.. | 1879 |
| **Thurston**, Asa. American Clergyman and Missionary | 1787.. | 1868 |
| **Ticknor**, George, LL. D. American Scholar and Professor. (*History of Spanish Literature.*) | 1791.. | 1871 |
| **Tidemand**, Adolf. Norwegian Painter. | 1814.. | 1876 |
| **Tildemann**, Frederick. German Physiologist and Anatomist. | 1781.. | 1861 |
| **Tilghman**, Lloyd. "Confederate" General | — .. | 1863 |
| **Tilly**, Count Charles Gustavus Edward Augustus von Tserclas. | 1784.. | 1869 |
| **Timoleon**, Gulielmo Brutus Icilius. Italian Mathematician; Author and Bibliophile | 1803.. | 1869 |
| **Titiens**, Theresa. Operatic Singer | 1834.. | 1877 |
| **Tobler**, Titus. Swiss Orientalist | 1806.. | 1877 |
| **Tod**, David. American Statesman and Diplomatist | 1805.. | 1868 |
| **Todd**, James H., D. D. Irish Professor and Author | 1805.. | 1869 |
| **Todd**, John, D. D. American Clergyman and Author | 1800. | 1873 |
| **Toldy**, Franz. Hungarian Author | 1805. | 1875 |
| **Tolstoi**, Count Alexis. Russian Poet and Novelist | 1817.. | 1875 |
| **Torrey**, Joseph. American Clergyman and College President. | 1797.. | 1867 |
| **Totten**, James. Brevet Major-General, U. S. A | 1816.. | 1871 |
| **Toucey**, Isaac. American Jurist and Politician | 1796.. | 1869 |
| **Townsend**, Rev. Chauncey Hare. Eng. Scholar and Author | 1800.. | 1868 |
| **Tracy**, Joseph, D. D. Clergyman, Author and Journalist | 1794.. | 1874 |
| **Tremain**, Lyman. American Lawyer | 1819.. | 1878 |
| **Trevelyan**, Walter Calverly. Eng. Geologist and Reformer | 1797.. | 1879 |
| **Troilus**, Gustavus Uno. Swedish Portrait Painter | 1804.. | 1875 |
| **Troplong**, Raymond Theodore. French Jurist and Publicist. | 1795.. | 1869 |
| **Tucker**, Edward. English Botanist | 1810.. | 1868 |
| **Tuckerman**, Henry Theodore. American Essayist and Poet. | 1813.. | 1871 |
| **Turnbull**, John. Scottish Clergyman | 1775.. | 1867 |
| **Turnbull**, Robert. American Clergyman and Author | 1809.. | 1877 |
| **Turner**, Rev. Charles Tennyson. English Poet | — .. | 1879 |
| **Tweed**, William Marcy. American Politician | 1823.. | 1878 |
| **Twesten**, August Detlev Christian. German Theologian | 1789.. | 1876 |
| **Tyler**, Robert O. Brevet Major-General, U. S. A | 1832?. | 1874 |
| **Tyler**, Samuel. American Lawyer and Author | 1809.. | 1878 |

## U.

| | BORN. | DIED. |
|---|---|---|
| **Uechtritz, Friedrich von.** German Poet | 1800 | 1875 |
| **Ule, Otto Eduard Vincenz.** German Naturalist | 1820 | 1876 |
| **Umbscheiden, Franz.** German Revolutionist and Journalist. | 1820 | 1874 |
| **Upham, Rev. Thomas Cogswell.** American Metaphysician and Professor | 1799 | 1872 |
| **Upjohn, Richard.** American Architect | 1802 | 1878 |
| **Upton, George Bruce.** American Manufacturer | 1804 | 1874 |
| **Urquiza, Don Juste José de.** Argentine General, Dictator and President | 1800 | 1870 |

## V.

| | | |
|---|---|---|
| **Vaillant, Jean Baptiste Philibert.** Fr. Marshal and Senator | 1790 | 1872 |
| **Valentine, David Thomas.** Civilian. (*History of New York.*) | 1801 | 1869 |
| **Vallandingham, Clement L.** American Politician | 1822 | 1871 |
| **Valpy, Abraham John.** Classical Editor | — | 1854 |
| **Van Brunt, Gershom J.** American Naval Officer | 1800 | 1863 |
| **Van Buren, James Lyman.** Brevet Brig.-General, U. S. Vols. | 1837 | 1866 |
| **Van Buren, John.** American Lawyer and Politician | 1810 | 1866 |
| **Vanderbilt, Cornelius.** American Capitalist | 1794 | 1877 |
| **Van Dorn, Earl.** "Confederate" General | 1823 | 1863 |
| **Van Eycken, John.** Dutch Painter | — | 1854 |
| **Vassar, Matthew.** Founder of Vassar College | 1792 | 1868 |
| **Vaugeron, Karl Adolph von.** German Jurisconsult, Professor, Author | 1808 | 1870 |
| **Vaulabelle, Achille Tenaille.** French Historian | 1799 | 1879 |
| **Vedder, Alexander M.** American Physician | 1814 | 1878 |
| **Velpeau, Alfred Armand Louis Marie.** French Surgeon and Author | 1795 | 1867 |
| **Vernon, Mrs. Jane Merchant.** American Actress | 1796 | 1869 |
| **Verplanck, Gulian Crommelin.** American Author, Jurist, Statesman | 1786 | 1870 |
| **Victor Emanuel II.** King of Italy | 1820. | 1878 |
| **Vilain XIV., Charles, Vicomte.** Belgian Statesman | 1803 | 1878 |
| **Villemain, Abel François.** French Author and Statesman | 1790 | 1870 |
| **Villepigue, John B.** "Confederate" General | 1834 | 1862 |
| **Vinton, Francis.** Prot. Episcopal Clergyman and Author | 1809 | 1872 |
| **Viriville, Vallet de.** French Archæologist and Author | 1815 | 1868 |
| **Vitet, Louis.** French Journalist, Historian, Publicist | 1802 | 1873 |
| **Volkhart, Wilhelm.** German Historical Painter | 1815 | 1876 |
| **Volkmann, Alfred Wilhelm.** German Physiologist | 1801 | 1877 |
| **Vollmer, Alexander Joseph.** German Philologist | 1803 | 1876 |
| **Von der Decken, Baron Charles Claus.** German Explorer | 1833 | 1865 |
| **Von Roon, Count Albrecht Theodor Emil.** Prussian General. | 1803 | 1879 |
| **Vyazemsky, Prince Peter Andréwich.** Russian Poet | 1792 | 1879 |

# W.

| | BORN. | DIED. |
|---|---|---|
| **Waagen, Gustav Friedrich.** German Author and Art Critic.. | 1794.. | 1868 |
| **Waddington, George,** D. D. English Divine. (*History of the Reformation on the Continent.*)..... | 1793.. | 1869 |
| **Wade, Benjamin Franklin.** American Politician..... | 1800.. | 1878 |
| **Walcott, Charles M., Sr.** Amer. Actor and Dramatic Writer.. | 1808.. | 868 |
| **Waldeck, Jean Frédéric de.** French Traveller and Artist.... | 1766.. | 1875 |
| **Walewski, Florian Alexandre Joseph Colona, Comte de.**..... | 1810.. | 1868 |
| **Walker, Amasa,** LL. D. American Political Economist..... | 1799.. | 1875 |
| **Walker, Robert James.** American Statesman and Publicist.. | 1801.. | 1869 |
| **Walker, William.** Scottish Engraver..... | \— | ..1867 |
| **Wallis, Robert.** English Landscape Engraver..... | 1814.. | 1878 |
| **Wallner, Franz.** German Actor..... | 1810.. | 1876 |
| **Walsh, Benjamin D.** American Entomologist..... | 1808.. | 1869 |
| **Walsh, John Edward,** LL. D. Jurist and Author..... | 1816.. | 1869 |
| **Walworth, Mansfield Tracy.** American Novelist..... | 1830.. | 1873 |
| **Walworth, Reuben Hyde.** American Jurist..... | 1789.. | 1867 |
| **Ward, Edward Matthew.** British Painter..... | 1816.. | 1879 |
| **Ward, Nathaniel Bagshaw,** F. R. S. Eng. Surgeon and Botanist. | — | ..1868 |
| **Ware. Ashur.** American Admiralty Jurist..... | 1782.. | 1873 |
| **Warnier, Auguste Humbert.** French Scholar and Author.... | 1810.. | 1875 |
| **Warren, Fitz Henry.** American General and Journalist..... | 1816.. | 1878 |
| **Warren, Jeremiah Mason.** American Surgeon and Writer... | 1810?. | 1867 |
| **Warren, Josiah.** Eccentric Reformer. (*True Civilization.*).. | 1799.. | 1874 |
| **Warren, Samuel.** English Jurist and Author. (*Ten Thousand a Year.*)..... | 1807.. | 1877 |
| **Washington, John A.** Proprietor of Mount Vernon..... | — | ..1861 |
| **Washington, W. D.** American Painter. (*Burial of Latanæ.*). | — | ..1870 |
| **Watson, Walker.** Scottish Song Writer..... | — | ..1854 |
| **Watts, Robert.** American Physician and Professor..... | 1812.. | 1867 |
| **Watts, Thomas.** English Linguist and Author..... | 1811.. | 1869 |
| **Wayne, James Moore.** American Jurist..... | 1790.. | 1867 |
| **Webb, Rev. John.** English Musical Composer, Antiquarian and Author..... | 1776.. | 1869 |
| **Weber, Ernst Heinrich.** German Physiologist..... | 1795.. | 1878 |
| **Webster, Horace,** M. D., LL. D. American Scholar and Teacher. | 1795.. | 1871 |
| **Webster, J. D.** Brevet Major-General, U. S. Vols..... | 1811.. | 1876 |
| **Weed, Stephen H.** American General..... | — | ..1863 |
| **Weekes, Henry.** British Sculptor..... | 1807.. | 1877 |
| **Weisbach, Julius Ludwig.** Mathematician, Engineer and Author..... | 1810.. | 1871 |
| **Welch, Bartholomew Trow.** American Baptist Clergyman... | 1794.. | 1870 |
| **Welcker, Friedrich Gottlieb.** Philologist, Archæologist..... | 1784.. | 1868 |
| **Welcker, Karl Theodor.** German Publicist and Professor.... | 1790.. | 1869 |
| **Weld, Charles Robert.** English Traveller and Author. (*Vacation Tours.*)..... | 1818.. | 1869 |
| **Welles, Gideon.** American Journalist and Politician..... | 1802.. | 1878 |
| **Wells, Charles J.** Eng. Author. (*Joseph and his Brethren.*).. | 1800?. | 1879 |
| **Wells, Darius.** Inventor of Wood Type..... | 1800.. | 1875 |

| | BORN. | DIED. |
|---|---|---|
| **Wells, Samuel.** American Phrenologist | 1820 | 1875 |
| **Westermann, Antoine,** PH. D. German Philologist | 1806 | 1870 |
| **Western, Pauline Lucille.** American Actress | 1843 | 1877 |
| **Westmacott, Prof. Richard R.** English Sculptor | 1798 | 1872 |
| **Weymer, Marguerite Georges.** French *Tragédienne* | 1786 | 1867 |
| **Wheatley, William.** American Actor | 1816 | 1876 |
| **Wheatstone, Charles.** English Inventor | 1802 | 1875 |
| **Wheelock, Merrill G.** Amer. Artist, Architect and Writer | — | 1866 |
| **Whelpley, James Davenport.** Amer. Physician and Scientist. | 1817 | 1872 |
| **Whewell, William,** D. D. Eng. Mathemat. and Philosopher | 1794 | 1866 |
| **White, Edwin.** American Painter | 1817 | 1877 |
| **White, Frank J.** American Brigadier-General | 1842 | 1875 |
| **Whitman, Sarah Helen.** American Poetess | 1803 | 1878 |
| **Whitney, Asa.** American Inventor and Manufacturer | 1791 | 1874 |
| **Whittingham, William Rollinson.** Amer. Prot. Epis. Bishop. | 1805 | 1879 |
| **Whyte-Melville.** English Novelist | 1821 | 1878 |
| **Wickliffe, Charles A.** "The Duke." Politician | 1788 | 1869 |
| **Wildermuth, Ottilie.** German Authoress | 1817 | 1877 |
| **Wilhelm, Carl.** Composer of "*Wacht am Rhein.*" | — | 1873 |
| **Wilkes, Charles.** American Naval Officer | 1801 | 1877 |
| **Wilkinson, Sir John Gardiner.** Archæologist and Geographer. | 1797 | 1875 |
| **Willard, Mrs. Emma.** American Educator and Authoress | 1787 | 1870 |
| **Williams, Barney.** (Bernard Flaherty.). American Actor | 1823 | 1877 |
| **Williams, Mrs. Catharine R.** American Poet and Authoress | 1790 | 1872 |
| **Williams, Rowland.** English Clergyman and Author | 1817 | 1870 |
| **Williams, Seth.** Brevet Major-General, U. S. Vols | 1822 | 1866 |
| **Willis, Nathaniel.** American Journalist | 1780 | 1870 |
| **Willis, Nathaniel Parker.** Amer. Poet, Essayist, Journalist | 1807 | 1867 |
| **Willis, Rev. Robert.** British Author | 1800 | 1875 |
| **Willis, Robert.** Eng. Physician and Author. (*Life of Servetus.*) | 1799 | 1878 |
| **Willis, William,** LL. D. Amer. Lawyer and Historical Writer | 1794 | 1870 |
| **Wilson, Henry.** American Statesman | 1812 | 1875 |
| **Wilson, John.** American Printer and Author | 1802 | 1868 |
| **Wilson, Oregon.** American Painter | — | 1873 |
| **Wilson, William.** English Botanist and Author | 1800 | 1871 |
| **Winterhalter, Franz-Xavier.** Portrait and *genre* Painter | 1806 | 1873 |
| **Winther, Christian.** Danish Poet and Novelist | 1796 | 1876 |
| **Wise, Henry Augustus.** U. S. Naval Officer and Author | 1819 | 1869 |
| **Wiser, Dr. David Friedrich.** Swiss Mineralogist | 1802 | 1878 |
| **Wislicenus, Gustav Adolf.** German Theologian | 1803 | 1875 |
| **Wolle, Right Rev. Peter.** Bishop of Moravian Church | 1792 | 1871 |
| **Wolowski, Louis François Michel Raymond.** French Senator and Writer on Political Economy | 1810 | 1876 |
| **Wood, Mrs. Eliza Logan.** American Actress | 1830 | 1872 |
| **Wood, Isaac.** American Physician and Philanthropist | 1793 | 1868 |
| **Woodman, John Smith.** American Professor | 1819 | 1871 |
| **Woodruff, Lewis Bartholomew.** American Lawyer and Judge. | 1810 | 1875 |
| **Woods, Leonard.** American College President and Editor | 1807 | 1878 |
| **Woodward, Bernard Bolingbroke.** English Author | 1816 | 1869 |
| **Wool, John Ellis.** Major-General, U. S. A | 1789 | 1869 |
| **Woolsey, Melancthon.** American Commodore | 1817 | 1874 |

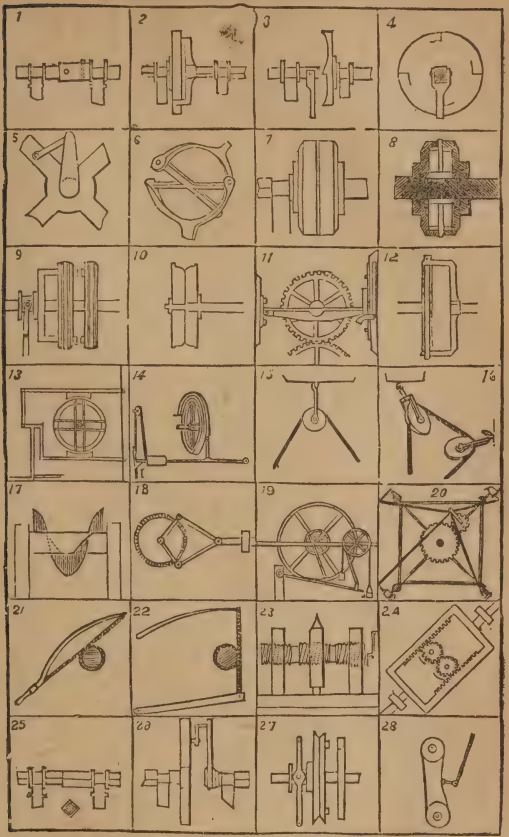
| | BORN. | DIED. |
|---|---|---|
| Worsley, Rev. Philip Stanhope. Eng. Poet and Translator... | — | ..1866 |
| Wrangel, Friedrich Heinrich Ernst, Count von. Prussian Military Officer | 1784.. | .1877 |
| Wright, Joseph A. American Lawyer and Diplomatist | 1810?. | .1867 |
| Wright, William B. American Jurist | 1807.. | 1868 |
| Wrottesley, John, Second Lord. English Astronomer | 1798.. | 1867 |
| Wunderlich, Karl August. German Physician | 1815.. | .1877 |
| Wyatt, Sir Matthew Digby. English Architect and Author... | 1820. | 1877 |
| Wyckoff, Dr. William H. American Teacher and Author | 1807.. | .1877 |
| Wylie, Robert. American Painter | — | ..1877 |
| Wyman, Jeffries, M. D. American Anatomist | 1814.. | .1874 |

## Y.

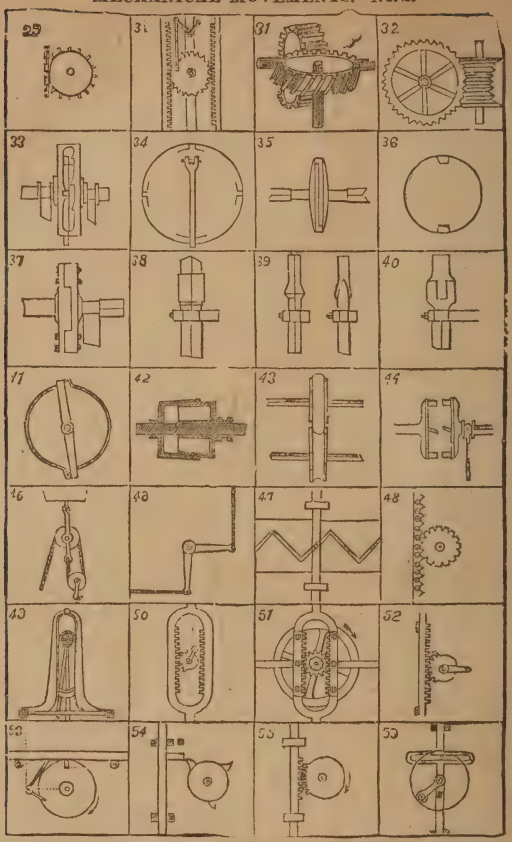
| | | |
|---|---|---|
| Young, Brigham. Mormon Prophet | 1801.. | .1877 |
| Young, Sir Charles George. Heraldic Scholar | 1795.. | .1869 |

## Z.

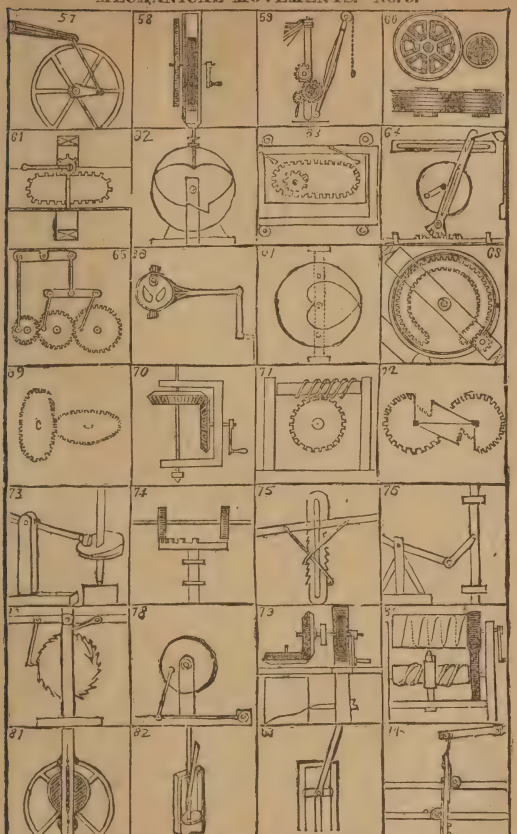
| | | |
|---|---|---|
| Zachariæ, Heinrich Albert. German Jurist | 1806.. | .1875 |
| Zahn, John Charles William. German Architect | 1800.. | .1871 |
| Zimmermann, Clemens. Bavarian Painter | 1788.. | .1869 |
| Zimmermann, Wilhelm. German Poet and Historian | 1807.. | .1878 |
| Zimmermann, Karl. German Theologian | 1803.. | .1877 |
| Zopfl, Heinrich Matheus. German Jurist | 1807.. | .1877 |
| Zsedenyi, Eduard von. Hungarian Statesman | 1803.. | .1879 |



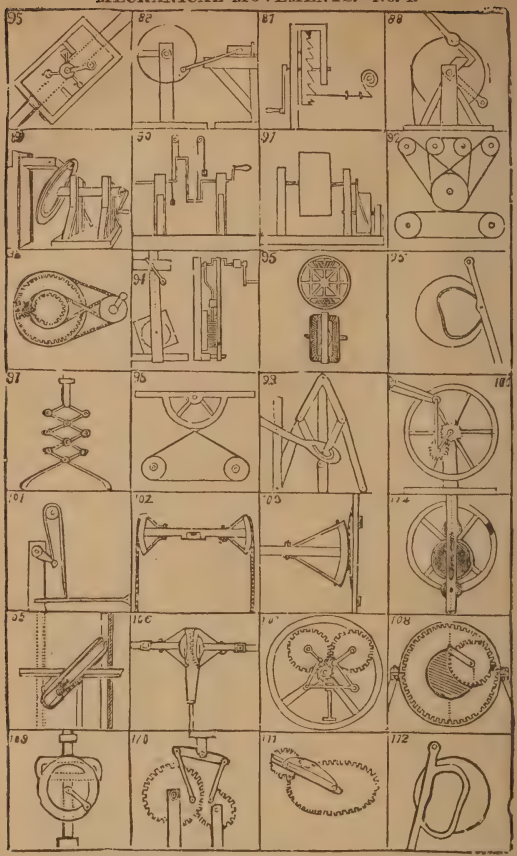

1. Shaft coupling.—2. Claw coupling.—3, 4. Lever couplings. On the driving shaft, a disk with spurs is mounted, and to the shaft to be driven a lever is hinged. By causing this lever to catch in the spurs of the disk, the coupling is effected.—5. Knee or rose coupling, of which 26 is a side view.—6. Universal joint.—7, 8. Disk and spur coupling.—9. Prong and spur lever coupling.—10. Fast and loose pulley.—11. Sliding gear, the journal-boxes of one of the wheels being movable.—12. Friction clutch. By tightening or releasing a steel band, encircling a pulley on the shaft, the machinery is thrown in or out of gear.—13, 14. Shoe and lever brakes. 15, 16. Change of motion by sheaves.—17. Spiral flanged shaft.—18. Connected with the rod are pawl links, catching into ratchet-teeth in the wheel to which rotary motion is to be imparted. When the rod moves in one direction, one of the pawls acts; and when the rod moves in the opposite direction, the other pawl acts in the same direction as the first.—19. The reciprocating motion of a rod is converted into rotary motion of the fly-wheel by a weight suspended from a cord, which passes over a small pulley that connects with a treadle, from which the motion is transmitted to the fly-wheel.—20, "Flying horse," used in fairs for amusement. By pulling the cords radiating from the crank, the persons occupying the seats or horses on the ends of the arms are enabled to keep the apparatus in motion.—21, 22. Bow-string arrangements, to connect reciprocating into rotary motion.—23. Same purpose by differential screw.—24. The same by double rack and wheels.—25. Coupling for square shafts.—26. Slide view of Fig. 5.—27. Sliding-spur pulley coupling.—28. Lever with bearing roller to tighten pulley bands.



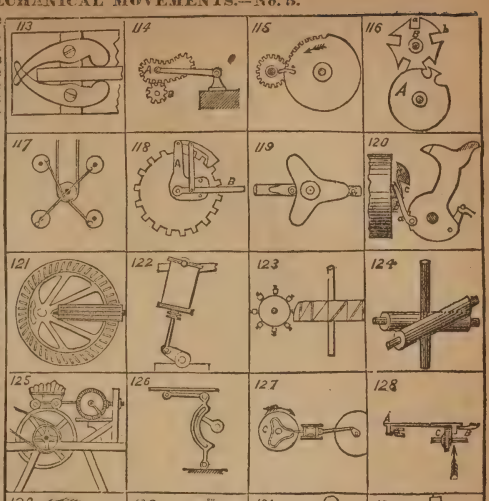

29. Chain-wheel.—30. Reciprocating rectilinear into reciprocating rotary motion by two racks and cog-wheel.—31. Oblique-toothed wheels.—32. Worm and worm-wheel.—33, 34. Claw coupling with hinged lever.—35, 36. Disk couplings, with lugs and cavities.—37. Disk coupling with screw-bolts.—38, 39, 40. Shaft couplings.—41. Face view of Fig. 12.—42. Friction cones.—43. Friction pulleys.—44. Self-releasing coupling.—Disks with oblique teeth. If the resistance to the driven shaft increases beyond a certain point, the disks separate.—45. Hoisting blocks.—46. Elbow crank, for changing motion.—47. Reciprocating into rotary motion by zigzag groove on cylinder.—48. Another form of Fig. 29.—49. Reciprocating into a rotary motion.—50. Same purpose.—51. Same purpose, by double rack and two ratchet pinions. When the double rack moves in one direction, one pinion is rigid with the shaft; when the rack moves in the opposite direction, the other pinion is rigid, and a continuous rotary motion is imparted to the fly-wheel shaft.—52. Reciprocating into oscillating.—53. Rotary into reciprocating. By the action of the wheel-pins the carriage is moved in one direction, and by the action of said pins on an elbow-lever, it is moved in the opposite direction.—54. Stamp rod and lifting cam.—55. For giving reciprocating motion to rack.—56. Same motion to a bar with slot, by means of an eccentric pin projecting from a revolving disk, and catching in the slot.




57. Walking-beam and fly-wheel.—58. Reciprocating motion to pump or other rod by means of eccentric disk and friction rollers. (See 81 and 104.)—59. Hoisting crane.—60. Friction gears. (See 43.)—61. Rotary into reciprocating by rising and falling pinion acting on endless rack.—62. By the revolving cam, a rising and falling or a reciprocating rectilinear motion is imparted to a drum.—63. Reciprocating motion to a frame by means of endless rack and pinion.—64. Reciprocating rectilinear motion to a toothed rack by a toothed segment on a lever-arm.—65. Reciprocating motion to a rod by means of revolving wheels of different diameters. (See 110.)—66. Cam and elbow lever.—67. Rod reciprocates by means of cam.—68. Revolving into reciprocating motion, by an endless segmental rack and pinion. 69. Elliptic gears.—70. Bevel gear.—71. Worm and worm-wheel.—72. Transmitting motion from one axle to another.—73. Continuous revolving into reciprocating, by a cam disk acting on an oscillating lever.—74. Intermittent revolving motion to a shaft with two pinions, and segment gear-wheel on end of shaft.—75. Oscillating lever, carrying pawls which engage teeth in the edges of a bar to which rectilinear motion is imparted.—76. Oscillating lever, connects by a link with a rod to which a rectilinear motion is imparted.—77. Oscillating lever and pawls, which gear in the ratchet-wheel.—78. Common treadle.—79. Describing on a revolving cylinder a spiral line of a certain given pitch, which depends upon the comparative sizes of the pinion and bevel-wheels.—80. Marking a spiral line, the graver moved by a screw. 81. (See 58.)—82. Plunger and rods.—83. Crosshead and rods.—84. Reciprocating rod guided by friction rollers.



85. Revolving into reciprocating motion, by means of roller-arms, extending from a revolving shaft.—86. Crank motion.—87. Reciprocating motion by toothed wheel and spring bar.—88. The shaft carries a taper, which catches a hook hinged to the drum, to carry drum along and raise the weight on the rope. When the tappet has reached its highest position, the hook strikes a pin, and disengages from the tappet, and the weight drops.—89. Reciprocating motion to a rod by means of a groove in an oblique ring secured to a revolving shaft.—90. Double crank.—91. Cam groove in a drum, to produce reciprocating motion.—92. Belts and pulleys. 93. Pulleys, belts, and internal gear.—94. As the rod moves up and down, the teeth of the cog-wheel come in contact with a pawl, and an intermittent rotary motion is imparted to said wheel.—95. By turning the horizontal axles with different velocities, the middle wheel is caused to revolve with the mean velocity.—96. Oscillating lever and cam groove in a disk. 97. Lazy tongs.—98. Oscillating segment and belt over pulleys.—99. Converting oscillating into a reciprocating motion by a cam-slot in the end of the oscillating lever.—100. Oscillating motion of a beam into rotary motion.—101. Motion of a treadle into rotary motion.—102. Double-acting beam.—103. Single-acting beam.—104. (See 58 and 81.)—105. Device to steady a piston by a slotted guide-piece.—106. Rod operated by two toothed segments.—107. Two cog-wheels of equal diameter, provided with crank, connected by links with a crossbar to which the piston-rod is secured.—108. Device for a rectilinear motion of a piston-rod.—109. Same purpose as 56.—110. Action similar to 65.—111. Revolving motion by a circular sliding pinion gearing in an elliptical cog-wheel.—112. Similar to 96.




113. Carpenter's clamp. The jaws turn on their pivot-screws, and clamp the board.—114. An irregular vibratory motion is given to the arm carrying the wheel A, by the rotation of the pinion B.—115. Intermittent rotary motion of the pinion-shaft, by the continuous rotary motion of the large wheel.—116. Stop-motion used in watches to limit the number of revolutions in winding up. The convex curved part, *a*, *b*, of the wheel B, serving as the stop.—117. Several wheels, by connecting-rods, driven from one pulley.—118. Intermittent circular motion is imparted to the toothed wheel by vibrating the arm B.—119. Reciprocating rectilinear motion is given to the bar by the continuous motion of the cam.—120. Mechanism for revolving the cylinder in Colt's fire-arms. When the hammer is drawn back the dog, *a*, attached to the tumbler, acts on the ratchet, *b*, on the back of the cylinder, and is held up to the ratchet by a spring, *c*.—121 Alternate increasing and diminishing motion by means of eccentric toothed wheel and toothed cylinder.—122. Oscillating or pendulum engine. The cylinder swings between trunnions like a pendulum. The piston-rod connects directly with crank.—123. Intermittent rotary motion.—124. Longitudinal and rotary motion of the rod is produced by its arrangement between two rotating rollers.—125. Friction indicator of Roberts. Upon the periphery of the belt-pulley a loaded carriage is placed, its tongue connected with an indicator.—126. Circular intermittent rectilinear reciprocating motion.—127. Continuous circular into intermittent circular motion. The cam is the driver.—128. Sewing-machine, four-motion feed. The bar B carries the feeding-points or spurs and is pivoted to slide A. B is lifted by a radial projection on cam C, which at the same time also carries A and B forward. A spring produces the return stroke, and the bar B drops by gravity.—129. Patent crank motion, to obviate dead centers. Pressure on the treadle moves the slotted slide A forward until the wrist passes the center, when the spring B forces the slide against the stops.—130. Four-way cock.—131. One stroke of the piston gives a complete revolution to the crank.—132. Rectilinear motion of variable velocity is given to the vertical bar by rotation of the shaft of the curved arm.—133. Pantagraph for copying plans, &c. C, fixed point. B, ivory tracing-point. A, pencil trace, the lines to be copied with, and B, the pencil, will reproduce it double size. Shift the slide to which C is attached, also the pencil slide, and size of the copy will be varied.—134. Ball-and-socket joint for tubing.—135. Numerical registering device. The teeth of the worm shaft-gear with a pair of worm-wheels of equal diameter, one having one tooth more than the other. If the first wheel has 100 teeth and the second 101, the pointers will indicate respectively 101 and 10,100 revolutions.—136. Montgolfier's hydraulic ram. The right hand valve being kept open by a weight or spring, the current flowing through the pipe in the direction of the arrow, escapes thereby. When the pressure of the water current overcomes the weight of the right valve, the momentum of the water opens the other valve, and the water passes into the air-chamber. On equilibrium taking place, the left valve shuts and the right valve opens.—137. Rotary engine. Shaft B and hub C are arranged eccentric to the case. Sliding radial pistons, *a*, *a*, move in and out of hub C. The pistons slide through rolling packings in the hub C.—138. Quadrant engine. Two single-acting pistons. B, B, connect with crank D. Steam is admitted to act on the outer sides of the pistons alternately through valve *a*, and the exhaust is between the pistons.—139. Circular into rectilinear motion. The scolloped wheel communicates motion to the horizontal oscillating rod, and imparts rectilinear movement to the upright bar.—140. Rotary motion transmitted by rolling contact between two obliquely arranged shafts.

| Before Christ | Genesis. | |
|---|---|---|
| | | **THE FIRST AGE OF THE WORLD.** |
| 4004 | I & II. | IN the beginning God created the heaven and the earth, etc., and last of all, man, after his own image. |
| | III. | Man falls from his first state, but is promised a Saviour, of the seed of the woman. |
| 4003 | IV, 1, | The world first peopled after Adam and Eve had left paradise. |
| 3875 | 8. | About this time Cain and Abel offer sacrifice, and Abel is murdered by his brother. |
| | V, 3, | Seth born. |
| 3874 | 6. | Enos born. |
| 3769 | IV, 26. | About this time men begin to call upon the name of the Lord. |
| 3679 | V, 9, | Cainan born. |
| 3609 | 12, | Mahalaleel born. |
| 3544 | 15, | Jared born. |
| 3382 | 18, | Enoch, the seventh from Adam, born. |
| 3317 | 21, | Methuselah born. |
| 3130 | 25, | Lamech, the father of Noah, born. |
| 3074 | 5, | Adam dieth, aged 930 years. |
| 3017 | 23, 24, | Enoch, in the 365th year of his age, taken up to God. |
| 2962 | 8, | Seth dieth, aged 912 years. |
| 2948 | 28, | Noah, the father and patriarch of the new world after the flood, born. |
| 2864 | 11, | Enos, the third from Adam, dieth, aged 905 years. |
| 2769 | 14, | Cainan dieth, aged 910 years. |
| 2714 | 17, | Mahalaleel, the fifth from Adam, dieth, aged 895 years. |
| 2582 | 20. | Jared, the sixth from Adam, dieth, aged 962 years. |
| 2469 | VI, 3. | God commands Noah to preach repentance, and to build the |
| | 1 Pet. III, 20. | ark, 120 years before the flood. |
| | 2 Pet. II, 5. | |
| 2448 | Gen. V, 32. | To Noah, aged 500 years, is born Japheth, and two years after, Shem. |
| | X, 21. | |
| 2353 | V, 31, | Lamech, the ninth from Adam, dieth, aged 777 years. He is the first man whom the Scriptures mention to have died a natural death before his father. |
| | 27. | Methuselah dieth a little before the flood, in the 969th year of his age. He was the oldest man. |
| 2349 | VII, 11. | The flood comes upon the earth in the 600th year of Noah's age. |
| | | **THE SECOND AGE OF THE WORLD** |
| | Genesis. | |
| 2348 | VIII, 18, | THE flood ceaseth, and Noah, with his family, and the creatures he carried in with him, comes out of the ark, and offers a |
| | 20. | burnt-offering. At the same time God makes a covenant with |
| | IX, 9, | Noah and his seed, promising never more to destroy the world by water; as a token whereof he placeth the rainbow in the cloud. |
| | 20. | The same year Noah begins to plant vines, and is drunk. |
| 2346 | XI, 10, | Arphaxad born. |
| 2311 | 12, | Salah born. |
| 2281 | 14, | Eber born. |
| 2247 | 16. | Peleg born: so-called, because in his days the earth was divided. |
| 2234 | X, 8, | About this time Nimrod begins to exalt himself, by laying the first foundation of the Assyrian monarchy. |
| | 11. | Nineveh, the metropolis of Assyria, built. |
| 2233 | XI, 4, 6, | About this time the posterity of Nimrod begin to build the city |
| | 8, 9, | and tower of Babel, so-called from the confusion of languages which God sent among the workmen. |
| 2217 | 18. | Reu born. |
| 2188 | Ps. CV, | Mizraim, the grandson of Ham, leads colonies into Egypt, and |
| | 23. | layeth the foundation of a kingdom, which lasted 1663 years; |
| | Is. XIX, | whence Egypt is called the land of Ham, and the Egyptian |
| | 11 | Pharaohs boasted themselves to be the sons of ancient kings. |

| Before Christ | Genesis. | |
|---|---|---|
| 2185 | XI, 20, | Serug born. |
| 2155 | 22, | Nahor born. |
| 2126 | 24, | Terah, Abram's father, born. |
| 2008 | 19, | Peleg, the sixth from Noah, dieth. |
| 2007 | 25. | Nahor, the ninth from Noah, dieth. |
| 1998 | IX, 28, 29. | Noah dieth, aged 950 years, 350 years after the flood. |
| 1996 | XI, 32, | Abram born: he was 75 years of age when his father Terah died, aged 205 years; so that Terah begat not Abram in the 70th year of his age, but Nahor and Haran, and in the 130th year of his age begat Abram. See *Acts* vii, 4. |
| 1980 | 29, 30. XVII, 17. | Sarai, Abram's wife (called also Iscah), Haran, Abram's brother's daughter, born ten years after her husband. |
| 1978 | XI, 21, | Reu, the seventh from Noah, dieth. |
| 1955 | 23. | Serug, the eighth from Noah, dieth. |
| 1925 | XIV, 1, 2, 3, etc. | About this time Chedorlaomer, king of Elam, subdueth the kings of Sodom, Gomorrah, Admah, Zeboim, and Bela; who serve him 12 years. |
| 1922 | XI, 31. | Terah with his family leaveth Ur of the Chaldees, and dwells at Haran. |

## THE THIRD AGE OF THE WORLD.

| | Genesis. | |
|---|---|---|
| 1921 | XII, 1, 2, | ABRAM, after his father's decease, in the 75th year of his age, is commanded by God to enter upon the land of Canaan, which God promiseth to give unto his seed, and that in his seed (*viz.* Christ Jesus our Lord) all the families of the earth should be blessed. |
| | 3, | |
| 1920 | 10. Gal. III, 17. Exodus XII, 40. Genesis XIII. | In the year following, a famine in the land of Canaan forceth Abram with his family to go into Egypt. From his first coming into Egypt to the departure of the children of Israel out of it, are reckoned 430 years. Abram and Lot in this same year return into Canaan; but the land not being sufficient for both their flocks, they part asunder. Lot goeth to Sodom. God reneweth his promise to Abram; he removeth to Hebron, and there buildeth an altar. |
| 1913 | XIV, 4, | Bera, the king of Sodom, with four other kings, rebel against Chedorlaomer, but are overcome by him in the valley of Siddim. Lot being taken prisoner, Abram rescueth him, slayeth Chedorlaomer and his confederates, and in his return is blessed by Melchisedec, king of Salem, and priest of God, to whom Abram gives |
| | 19, | |
| | 20. | tithe. The rest of the spoils, his partners having had their portions, he restoreth to the king of Sodom. |
| | XV, 2. | Abram complaineth for want of an heir: God promiseth him a son, and a multiplying of his seed. Canaan is promised again, and confirmed by a sign. |
| 1911 | XVI, 1, 2, | Sarai, being barren, giveth Hagar, her handmaid, to Abram. |
| 1910 | 15. | Ishmael, Hagar's son, born. |
| 1908 | XI, 13. | Arphaxad, the third from Noah, dieth. |
| 1897 | XVII, 5, | God maketh a covenant with Abram, and in token of a greater blessing changeth his name into Abraham. As a seal of this cove- |
| | 10, | nant, circumcision is ordained. Sarai, her name is also changed |
| | 15, | into Sarah, and she is blessed. God promiseth them a son, and |
| | 19. | commandeth that his name be called Isaac; in him God promiseth to establish his covenant. |
| | XVIII. | Abraham entertaineth three angels, who renew the promise to him of having a son. God revealeth to Abraham the destruction of Sodom, with whom Abraham intercedes for Lot and his family. See *Gen.* XIX, 29. |
| | XIX, | Lot is commanded, for the preservation of himself and his |
| | 17, | family, to get out of Sodom, and to flee to the mountain; but by |
| | 22, | much entreaty he obtaineth leave to go into Zoar. Sodom, Go- |
| | 24, 25, | morrah, and all the cities in the vale of Siddim, with all the inhabitants of them, are, for the most horrible sins, destroyed by fire and brimstone from heaven. The Dead Sea remains a monument thereof unto this day. Lot's wife, for looking back |
| | 26, | upon Sodom, contrary to God's command, is turned into a pillar |
| | 30. | of salt; and Lot himself, fearing to continue at Zoar, leaves the plain country, and betakes himself to the mountain, carrying his two daughters with him. |

| Before Christ | Genesis. | |
|---|---|---|
| 1896 | XXI, 2. | Isaac born in the 100th year of Abraham's age. Not long after, |
| | XIX, 36. | to Lot are born Moab and Ammon, his sons and at the same time his grandsons. |
| 1892 | XXI, 14. | Hagar and Ishmael, at Sarah's request, are cast forth. |
| 1878 | XI, 15. | Salah, the fourth from Noah, dieth. |
| 1871 | XXII. | God tempteth Abraham to offer Isaac. Abraham giveth proof of his faith and obedience. |
| 1859 | XXIII. | Sarah dieth at Hebron, in Canaan, in the 127th year of her age. |
| 1856 | XXIV. | Isaac marrieth Rebekah, the daughter of Bethuel, the son of Nahor, in the 40th year of his age. |
| 1846 | XI, 11. | Shem, the son of Noah, dieth. |
| 1837 | XXV, 24. | Jacob and Esau born, in the 60th year of their father Isaac's age. |
| 1821 | XXV, 7. | Abraham dieth, aged 175 years. |
| 1817 | XI, 17. | Eber, the fifth from Noah, dieth: from him Abraham and his posterity were called Hebrews. *Gen.* xiv, 13. |
| 1796 | XXVI, 34. | Esau, aged forty years, marrieth Judith, the daughter of Beeri the Hittite, and Bashemath, the daughter of Elon the Hittite. |
| 1773 | XXV, 17. | Ishmael dieth, aged 137 years. |
| 1760 | XXVII. | Jacob, by his mother's instruction, obtaineth the blessing from Isaac, his father, which was designed for Esau. Upon which he |
| | XXVIII. | is forced to flee into Mesopotamia, to shun his brother's rage. Upon the way are foretold unto him in a vision the blessings of |
| | XXIX. | his posterity. At length he cometh to his uncle Laban's house, and covenanteth to serve him seven years for his daughter Rachel, but Laban deceiveth him with Leah; the marriage-week being completed, Rachel also is given him to wife, upon condition of serving seven years more. |
| | | Of Leah are born, |
| 1758 | 32, | Reuben, |
| 1757 | 33, | Simeon, |
| 1756 | 34, | Levi, |
| 1755 | 35, | Judah, from whom the Jews receive their denomination. |
| 1745 | XXX, 23. | Rachel, having been long barren, at length beareth Joseph. Jacob, desiring to depart, is persuaded by Laban to serve six years more for some part of his flock. |
| 1739 | XXXI. | Jacob, after he had been twenty years in Mesopotamia, sets forward on his journey homeward, without acquainting his father or his brothers-in-law. Rachel stealeth her father's gods, and is pursued by Laban. Jacob, by his prudence, is reconciled to his |
| | XXXII. | brother Esau. He wrestleth with an angel at Peniel, and is called Israel. |
| | XXXIV. | About this time, Dinah, Jacob's daughter, is defloured by Shechem, the son of Hamor. Simeon and Levi, Dinah's brethren, revenge their sister's quarrel by putting all the males of Shechem to the sword; for which thing Jacob reproveth them. |
| | XXXV, 16. | Rachel is delivered of Benjamin on the way betwixt Beth-el, or Beth-le-hem, and Ephrath, and dies in childbed. Some think that Job lived about this time. |
| | XXXVIII, 16. | Judah lieth with Tamar, his daughter-in-law, in disguise. |
| 1729 | XXXVII. | Joseph is hated by his brethren, and is sold to merchantmen, Ishmaelites and Midianites, who carry him into Egypt, where he is sold to Potiphar, an officer of Pharaoh, and by him made overseer of his house. |
| 1718 | XXXIX. | Joseph resisteth the temptations of his master's wife; he is falsely accused by her, and cast into prison. He interpreteth the |
| | XL. | dreams of Pharaoh's butler and baker, which come to pass according to his interpretation. |
| 1716 | XXXV, 28. | Isaac dieth, aged 180 years, and is buried by his sons, Jacob and Esau. |
| 1715 | XLI, 25, | Joseph interpreteth Pharaoh's two dreams; he giveth Pharaoh counsel, and is made governor of the whole land of Egypt. |
| | 47, | Here begin the seven years of plenty in the land of Egypt. |
| | 50, | About this time Manasseh and Ephraim, Joseph's two sons, are born of Asenath, the daughter of Potipherah, priest of On. |
| 1708 | 54. | Here begin the seven years of famine. |
| 1707 | XLII, 1, | Jacob sendeth his ten sons to buy corn in Egypt; they are |
| | 17, | imprisoned by Joseph for spies; but are set at liberty on condi- |
| | 20. | tion of bringing Benjamin, and Simeon is kept as a pledge. |

| Before Christ | | |
|---|---|---|
| | Genesis. XLIII. XLV. | Jacob is with much difficulty persuaded to send Benjamin. Joseph maketh himself known to his brethren, and sendeth for his father by command from Pharaoh. |
| 1706 | XLVI. | Jacob, having offered sacrifice to God for that his son Joseph is yet alive, goes with all his family into Egypt, in the third year of the famine, and 130th year of his age. He is seated in the land of Goshen. |
| 1704 | XLVII. | Joseph getteth all the money, lands and cattle of the Egyptians for bread; only the lands belonging to the priests he buyeth not. |
| 1703 | | |
| 1689 | XLVIII. XLIX. | Jacob adopteth Ephraim and Manasseh, and blesseth them, and all his sons; prophesieth the descent of the Messiah from Judah, and dieth, aged 147 years; seventeen whereof he lived in Egypt. He is, with great pomp, carried into Canaan, and buried in the sepulchre of his father. |
| 1635 | L. | Joseph, on his death-bed, prophesieth unto his brethren their return to Canaan; takes an oath of them to carry his bones out of Egypt, and dieth, aged 110 years. |
| | | The book of Genesis endeth in the death of Joseph, containing the history of 2369 years; next to which in order of time the book of Job follows, written (as it is generally believed) by Moses. |
| 1619 | Exodus. VI, 16. | Levi dieth in Egypt, aged 137 years; he was grandfather to Moses and Aaron. |
| 1577 | I, 8. | Here begins the bondage of the children of Israel, when a king rose up in Egypt, who knew not Joseph. |
| 1574 | VII, 7. | Aaron born, three years before his brother Moses, 83 years before the departure of the children of Israel out of Egypt. |
| 1573 | I, 15, 22. | Pharaoh having in vain commanded the Hebrew midwives to destroy all the males of the Israelites, sets forth an edict, charging that they be all cast into the river. |
| 1571 | II, 1, 5, | Moses is born, who, being hid in the flags by the river's side, is found by Pharaoh's daughter, and becomes her adopted son. |
| 1531 | 11. | Moses, in the 40th year of his age, having slain an Egyptian, whom he saw contending with a Hebrew, fleeth into Midian, where he marrieth Zipporah, the daughter of Reuel, or Jethro, a priest, and liveth with him forty years. |
| 1530 | Josh. XIV, 7, 10. | Caleb, the son of Jephunneh, born. |
| 1491 | Ex. III, 1, 2, etc. | Whilst Moses keeps his father-in-law's sheep at mount Horeb, God appeareth to him in a burning bush, and sendeth him to deliver Israel. |
| | V. | Moses and Aaron having declared to Pharaoh the message on which they are sent unto him from God, are charged by him as heads of a mutiny, and sent away with many bad words; and more grievous labors are forthwith laid upon the Israelites. |
| | VII, 7. | Moses being now 80, and Aaron 83 years of age, urged thereunto by God, return again unto Pharaoh, where the magicians, by their sorcery imitating the miracles of Aaron's rod turned into a serpent, make Pharaoh more obstinate than he was before. Wherefore God, by the hand of Moses, lays ten plagues upon the Egyptians. |
| | Psalm. LXXVIII. CV. | |

## THE FOURTH AGE OF THE WORLD.

| | | |
|---|---|---|
| | Exodus. XII, 11, | UPON the fourteenth day of the first month (which was *May* the fourth, upon *Monday* with us), in the evening, the passover is instituted. |
| | 29, 41. | Upon the fifteenth of the same month, at midnight, the first-born of Egypt being all slain, Pharaoh and his servants make haste to send away the Israelites; and they, the self-same day wherein they were let go out of bondage, being the complete term of 430 years from the first pilgrimage of their ancestors, reckoning from Abraham's departure out of Charran, take their journey and march away, being 600,000 men, besides children, and come to Rameses, from whence by several encampings they come to the Red sea, the Lord conducting them in a pillar of a cloud by day, and in a pillar of fire by night. They carry Joseph's bones with them. |
| | Numbers. XXXIII. | |
| | Exodus. XIV. | At the Red sea Pharaoh with his host overtakes them, Moses divides the waters with his rod, and the children of Israel pass |

| Before Christ | Exodus. | |
|---|---|---|
| 1491 | XIV. | through on dry ground unto the desert of Etham; whom, when Pharaoh and his army would needs follow, they are all overwhelmed by the waters coming together at the dawning of the day, whereby the Israelites are wholly freed from the bondage of |
| | XV. | the Egyptians; whose carcasses when they see floating all the sea over, and cast upon the shore, they sing a song of praise and thanksgiving unto God. |
| | XVI. | Upon the fifteenth of the second month (our *June* the 4th, being *Thursday*), the Israelites come to the wilderness of Sin, which lieth between Elim and Sinai, where, for want of food, they murmur against God and their leaders: about the eventide God sends them quails, and the next morning rains upon them manna from heaven; and upon that kind of bread they lived afterward by the space of forty years, even till they came to the borders of the land of promise. An omer of it is preserved for a memorial. |
| | XVII, 1, | At Rephidim, which was the eleventh place of their encamping, the people murmur for want of water; Moses gives them water by striking the hard rock in Horeb with his rod. |
| | 8, 9, etc. | The Amalekites, falling upon the rear of the Israelites, are discomfited by Joshua, whilst Moses holds up his hands to God in prayer. |
| | XX. | God publisheth his Law, contained in the Ten Commandments, with a terrible voice from mount Sinai. |
| | XXI. | The people being in great fear, God gives them sundry other |
| | XXII, etc | laws, all which being written in the book of the covenant, Moses proposeth them to the people: which done, rising early in the |
| | XXIV. | morning, he builds an altar at the foot of the mountain, and sets up twelve statues, according to the twelve tribes of Israel, and sends twelve young men of the first-born (whom the Lord hath consecrated to himself as ministers of those holy things, before the Levitical priesthood was ordained), which offer sacrifice, first for sin, and then for thanksgiving, to the Lord: and when Moses had read the book of the covenant, he takes the blood of the calves and goats so offered, and with water, scarlet wool, and hyssop, sprinkles the book therewith, and all the people, or those twelve statues representing them; and so performs a solemn covenant between God and his people. |
| | 9, 18. | Moses and Aaron, Nadab and Abihu, and seventy men of the elders of Israel, go up into the mount, and there behold the glory of God: the rest returning, Moses with his servant Joshua abides there still, and waits six days, and upon the seventh day God speaks unto him, and there he continues forty days and forty nights (reckoning those six days which he waited for the appearance of the Lord), eating no meat all that while, nor drinking water (*Deut.* ix, 9); where he receives God's command touching the |
| | XXV, etc. | frame of the tabernacle, the priests' garments, their consecration, sacrifices, and other things comprised in this and the six following chapters. |
| | XXXI, 18. | At the end of the forty days God gives Moses the two tables of the Law in stone, made by God's own hand, and written with |
| | XXXII, | his own finger; bidding him withal quickly to get him down, for that the people had already made to themselves a molten calf to worship. Moses by prayer pacifieth God, and goes down from the mount, and seeing the people keeping a festival in honor of their idol in the camp, he breaks the tables of the law at the foot of the mount: for which the Jews keep a solemn fast unto this day. |
| | 20, 28. | Moses having burned and defaced the idol, puts 3000 of the idolaters to death by the hands of the Levites. |
| | XXXIV, | God commands Moses to frame new tables of stone, and to bring them with him into the mount: Moses brings them the next morning, and while he stands in the cleft of the rock, God passeth by, and showeth him a glimpse of his glory. |
| | 10. | God renews his covenant with his people, and upon certain conditions gives them his laws again. |
| 1490 | XXXIX. | In the first six months of this year, the tabernacle, the ark of the covenant, the altar, the table of show-bread, the priests' garments, the holy ointments, the candlestick, and other utensils and |

| Before Christ | | |
|---|---|---|
| 1490 | Exodus. XXXIX. | vessels belonging to the sacrifices, are finished in the desert at mount Sinai, and are brought unto Moses. |
| | XL. | The tabernacle is set up and anointed with holy oil. Aaron and his sons are consecrated for the priesthood. |
| | Lev. X. | Nadab and Abihu, for offering strange fire, are struck dead in the place by fire from heaven. |
| | Numb. VII. | The princes of the tribes present their offerings toward the dedication of the tabernacle. God speaketh to Moses from the mercy-seat. |
| | IX. | The second passover is instituted. |
| | X, 29. Exodus. XVIII. | Jethro, who is called Hobab, brings his daughter Zipporah, with her two sons, Gershom and Eliezer, which were left with him, to his son-in-law, Moses: and having congratulated his and the whole people of Israel's deliverance out of bondage, he openly declares his faith and devotion toward the true God. By his advice Moses imparts the government of the people to some others, and ordains magistrates for the deciding of lesser causes. |
| | Numbers. XI, | Moses complains to God of the over-great burden of his government; God, to ease him of his charge, gives him for assistance the court of seventy elders. |
| | 31. | The people lust for flesh. God gives them quails in wrath; and sends withal a most grievous plague among them. |
| | XII. | God rebukes the sedition of Miriam and Aaron, and maintains Moses' right. |
| | XIII. | From the wilderness of Paran, near Kadesh-barnea, twelve men are sent (among whom are Caleb and Joshua) to discover the land of Canaan. Returning, they bring with them a branch of a vine, with a cluster of grapes upon it; ten of the twelve so sent speak ill of the country, declare it barren, and magnify the cities for their strength, and the giantly stature of the inhabitants. |
| | XIV. | The people, terrified with this relation, are about to return into Egypt, from which Caleb and Joshua endeavoring to dissuade them are like to be stoned. At this God is so provoked that he threatens to destroy them; but is prevailed upon by Moses, through his prayers, to spare them. Nevertheless he denounceth that all who are now twenty years old and upward (except Caleb and Joshua) shall die in the wilderness. The men who raised the evil report are all destroyed by sudden death. Some endeavoring to enter upon the promised land, contrary to the command of God, are smitten by the Amalekites and Canaanites. |
| 1489 | Deut. I, 46. | In this place, *viz.* Kadesh-barnea, the Israelites continue many days; but that in some places they continued many years, appeareth, for that in the space of 37 years there are but 17 encampings mentioned. |
| 1471 | Numbers. XXXI. XVI. | To their long continuance in Kadesh, and the encampings from thence, all that we find delivered in the xvth and four next ensuing chapters of *Numbers* seems to refer; as how Korah, Dathan, and Abiram, for raising a mutiny against Moses and Aaron, were swallowed alive into the earth, and 250 of their associates; and how the people, murmuring against Moses and Aaron for the calamity which had befallen their brethren, were destroyed by |
| | XVII. | God, to the number of 14,700 men: and how twelve rods being brought by twelve princes, and laid in the sanctuary, Aaron's rod only budded, and brought forth almonds, and was laid up before the ark, for a memorial to those who should afterward be given to rebellion. |
| 1452 | XX, | In these 37 years the Israelites, by 17 encampings, having compassed the hill country of Seir and Edom, they come to the wilderness of Zin, in the first month of the fortieth year after their departure out of Egypt. |
| | 1, | Here Miriam, the sister of Moses and Aaron, dieth. |
| | 2, | The people again for want of water murmur against Moses and Aaron, whom when God had commanded to call water out of the rock only by speaking to it, Moses, being moved in his mind through impatience and diffidence of the thing, speaks something, whatever it was, unadvisedly with his lips, and strikes the rock thrice with Aaron's rod, and thereby draws water from it; but for |
| | 12, | transgressing God's command, they are both debarred from entering into the land of Canaan. |

| Before Christ | | |
|---|---|---|
| 1452 | Numbers. XX, 23, 28. | In the fifth month of this year Aaron dieth at Mosera, on the top of mount Hor, at the age of 123 years, leaving his son Eleazar his successor in the high priesthood. |
| | XXI, 5, 9. John III, 14. 1 Cor. X, 9. | The people murmuring are plagued with fiery serpents, whereof many die; upon their repentance God commands that a brazen serpent be made and lifted up upon a pole, that as many as look on it may live. |
| | Numbers. XXI, | About the latter end of this year, all those who at Kadesh-barnea mutinied against God being wholly extinct and dead, the Israelites pass over Zared, and come to the borders of Moab at Ar, and at length they arrive at Bamoth, a valley in the country of the Moabites, and pitch at mount Pisgah. |
| 1451 | 21, | Sihon, king of the Amorites, refusing them passage through his country, is slain, and the Israelites possess his land. |
| | 33. | Og, the king of Bashan, coming out against Israel, is destroyed with all his people, not one left alive, and his country possessed by the Israelites. |
| | XXII, 1, | After these victories the Israelites set forward, and encamp in the plains of Moab. |
| | 2, 3. | Balak, king of Moab, considering what the Israelites had done to the Amorites, fears, lest under pretence of passing through his country, they should possess themselves of his whole kingdom, takes counsel with the princes of the Midianites his neighbors, and sends for Balaam, a soothsayer out of Mesopotamia, to come and curse the Israelites, promising him great rewards for his labor, purposing afterward to make war upon them. |
| | Joshua. XXIV, 9. Numbers. XXII, 7, 35. 2 Pet. II, 15, 16. | Balaam, forewarned of God, refuseth at first to come; but being sent for a second time, he importuneth God to let him go, and goes with a purpose indeed to curse Israel; but God, offended thereat, makes the dumb ass of this wizard, on which he rode, speaking in a man's voice, to reprove his folly. |
| | Numbers. XXIII. Deut. XXIII, 5. Joshua, XXIV, 10. | Balaam twice offers sacrifice, and would fain have cursed Israel, to gratify Balak therein; but being forced thereto by the Spirit of God, instead of cursing, he blesseth them altogether; foretelling what felicity attended them, and what calamities should befall their enemies. |
| | Numbers XXV, 1, 2, 3, etc. Deut. IV, 3. Psalm. CVI, 28. Rev. II, 14. 1 Cor. X, 8. | By his advice the women of Moab and Midian are set on work to turn the Israelites away to idolatry. Wherefore God commands Moses first to take all the ringleaders of this disorder, and to hang them up before the sun, and then gives order to the judges to put to death all such as had joined themselves to Baal-peor. Last of all, God sends a plague upon the people, whereof die 23,000 men in one day: which added to them which were hanged and killed with the sword, amount in all to 24,000. |
| | Numbers. XXV. Psalm. CVI, 30. Numbers. XXV, 13, 17. | Phinehas, the son of Eleazar, by killing Zimri, the chief of his father's family, and Cozbi, the daughter of Zur, a prince of the Midianites, appeaseth the wrath of God, and the plague ceaseth. God therefore settleth the high priesthood forever upon the house of Phinehas, and commands that war be made upon the Midianites. |
| | XXVI. | Moses and Eleazar, by God's command, in the plain of Moab, near unto Jordan, over against Jericho, number the people from twenty years old and upward, and find them to be 601,730 men, besides the Levites, whose number, reckoning them from one month old and upward, comes to 23,000; and then Moses receives command for the parting the land of promise among the Israelites. |
| | XXVII, 1, 2. | The daughters of Zelophehad have their father's land parted among them, for want of issue male; this occasions the law for succession in heritages to be made. |
| | 12, 23. Deut. III, 26, 27, 28. | God signifies to Moses that he shall die, and Joshua is thereupon declared to be his successor; upon whom Moses lays his hands, and gives him instructions. Several laws are made. |
| | Numbers. XXXI. Josh. XIII, 21, 22. | Twelve thousand of the Israelites under the command of Phinehas vanquish the Midianites, and put to the sword all the males among them, with their five princes, and among them Zur, the father of Cozbi, and Balaam the wizard; but they save the women alive; at which Moses is wroth, and commands that every male child, and all the women, except such as be virgins, be killed. |

Before Christ 1451 | Numbers. XXXII. Deut. III. Josh. XIII and XXII. | The lands which belonged to Sihon and Og, namely, all from the river Arnon to mount Hermon, Moses divides and gives to the tribes of Reuben and Gad, and the half tribe of Manasseh; so that their possessions lay on this side Jordan; nevertheless, they assist the rest of the tribes in all their wars, till they have subdued the Canaanites, and possessed the promised land.

Deut. XXVII. XXVIII. | Moses commands the people, that in their passage over Jordan they shall set up great stones, and engrave the Ten Commandments on them, with the form of blessing upon mount Gerizim, and of cursing on mount Ebal, exhorting them to observe the law of God, by setting before their eyes the benefits that would ensue thereon.

XXIX. | He also renews the covenant made by God with them and their children on mount Horeb, and again persuades them to keep that covenant by all the blessings and curses which would undoubtedly

XXX. | follow the keepers or breakers of it; yet with a promise of pardon and deliverance, if at any time, having broken it, they shall repent them of their sin; and tells them further, that God had therefore thus declared his will unto them, to the end that none hereafter offending shall pretend ignorance.

XXXI. XXXII. | Moses, having written this law, delivers it to the priests, the sons of Levi, and the elders of the people, to be kept; the same day also he writes his most excellent song, and teaches the same to the children of Israel to be sung; and having finished the book of the law, he takes order to have it laid up in the side of the ark.

XXXIII. | Moses now drawing near to his end, blesseth every tribe in particular, by way of prophecy, save only the tribe of Simeon.

XXXIV. | In the 12th month of this year he goes up to mount Nebo, and from thence beholds the land of promise, and there dieth, aged 120 years; the body of Moses God translates out of the place where he died into a valley of the land of Moab, over against Beth-peor, and there buricth it; nor doth any man know the place of it unto this day. The Israelites mourn for him 30 days.

Here ends the Pentateuch, or five books of Moses, containing the history of 2552 years and a half, from the beginning of the world; and the book of Joshua begins with the forty-first year after the departure of the children of Israel out of Egypt.

Joshua. II. | Joshua being confirmed in his government by God, sends forth spies from Shittim to the city of Jericho, who, being harbored by Rahab, are privily sent away, when search is made for them.

III. | Upon the tenth day of the first month (*April* 30), to wit, the same day that the Paschal Lamb was to be chosen out of the flock, the Israelites under the conduct of Joshua, a type of Jesus Christ, go up out of the river Jordan into the promised land of Canaan, a type of a more heavenly country. They pass through the river

IV. | on dry ground, the waters being for the present divided; for a memorial of which miraculous passage Joshua sets up twelve stones in the very channel of Jordan, and taking twelve other stones out of the midst thereof, sets them up at Gilgal, the place where they next encamp.

V, | The day following Joshua renews the use of circumcision, which had been omitted forty years.

10. | Upon the 14th day of the same month, in the evening, the Israelites celebrate their first passover in the land of Canaan.

11, 12, | Next day after the passover manna ceaseth.

13. | Our Lord Jesus, Captain of his Father's host, appears to Joshua, the typical Jesus, before Jericho, with a drawn sword in his hand, and promiseth there to defend his people.

VI. | Jericho, the ark of the Lord having been carried round about it, is taken the seventh day, the walls thereof falling down at the sound of the priests' trumpets; all the inhabitants are put to the sword, except Rahab and her family.

VII. | The Israelites besiege Ai, and are smitten by their enemies, God having abandoned them, for sacrilege committed by Achan: Achan's sin being discovered by the casting of lots, and himself

VIII, | found guilty, he is stoned to death, and, together with his children and cattle, burned with fire. God being pacified hereby, Ai is taken by ambushment and utterly destroyed.

30, | On mount Ebal, according to the law made, is an altar erected,

| Before Christ | | |
|---|---|---|
| 1451 | Joshua. VIII, 32–35. | and the Ten Commandments engraven on it; the blessings and cursings are repeated on mount Ebal and mount Gerizim, and the book of the law read in the ears of the people. |
| | IX. | The kings of Canaan combine against Israel; only the Gibeonites craftily find a way to save their own lives by making a league with them; but are afterward deputed to the servile offices of the house of God. |
| | X. | Adoni-zedek, king of Jerusalem, with the kings of Hebron, Jarmuth, Lachish, and Eglon, hearing that Gibeon is fallen off from them, join their forces together and besiege it; but Joshua raiseth the siege, pursueth those five kings, and smiteth them as far as Azekah, the Lord in the meanwhile killing more with hailstones from heaven than the Israelites with their swords. Joshua commands the sun to stand still over Gibeon, and the moon over the valley of Ajalon, by the space almost of one whole day, until the Israelites are fully avenged of their enemies. The five kings hide themselves in a cave at Makkedah; from whence they are brought forth, scornfully used, and hanged. |
| 1450 | Ex. XXIII, 10, 11. | From the autumn of this year, wherein, after the failing of manna, they began to till the ground, the rise of the sabbatical years is to be taken. |
| 1445 | Josh. XIII. | Joshua, now grown old, is commanded by God to divide all the land on the west of Jordan among the nine tribes remaining, and the other half-tribe of Manasseh. The Lord and his sacrifices are the inheritance of Levi. |
| | XI, | The rest of the kings, with whom Joshua had waged war for six years, resolve to set upon him with united forces: but Joshua comes upon them unawares, slays them, and possesseth their countries. |
| | 21. XIV. | Joshua now roots out those giants, the Anakims, with their cities, out of the hill-countries, out of Hebron, Debir, and Anab, and generally out of all the mountains of Judah and all Israel. |
| | XV. | And having gotten the whole land into his hands, he divides it among the children of Israel according to their tribes; and the land rested from war. |
| 1444 | | The first sabbatical year, or year of rest; from hence the year of Jubilee, or every fifty years' space, is to be reckoned. |
| | XVIII. | The tabernacle is set up at Shiloh (thought to be the same with Salem), where it continued 328 years. |
| | XXII. | The Reubenites, Gadites, and the half-tribe of Manasseh, with a blessing, are sent home to their possessions on the other side of Jordan. |
| 1443 | XXIII. XXIV. | Joshua gathers together all Israel, exhorts them to obedience, briefly recites God's benefits to them, reneweth the covenant between them and God, and dieth, 110 years old. |
| 1413 | Judges II, 7. | After the decease of Joshua, and the elders who outlived him, and who remembered the wonders which God had wrought for |
| | III, 6, 7, | Israel, there succeeds a generation of men which forget God, and mingle themselves with the Canaanites by marriage, and worship their idols. In this time of anarchy and confusion, when every man did that which seemed right in his own eyes, all those disorders were committed which are reported in the last five chapters |
| | 8, | of the Book of Judges; to wit, the idolatry of Micah and the children of Dan; the war of the Benjamites, and the cause thereof. God, being highly provoked, gives them up into the hands of Cushan, king of Mesopotamia; which first calamity of theirs holds them but eight years. |
| 1405 | 9, | Othniel, the son of Kenaz, and son-in-law to Caleb, stirred up |
| | 10, | by God as a judge and avenger of his people, defeats Cushan, and delivers the Israelites out of bondage; and the land rested forty |
| 1343 | 12, | years after the first rest which Joshua procured for them. Othniel dying, the Israelites fall again to sin against God, and are given over into the hands of Eglon, king of Moab, who, joining with the Ammonites and the Amalekites, overthrows the Israelites, and takes Jericho; and this second oppression continueth |
| 1325 | 15, | eighteen years. Ehud, the son of Gera, is raised up by God to be an avenger of his people; for feigning a message to Eglon, he runs him into the |
| | 21, | belly with his dagger; then getting away, he gathers all Israel |

| Before Christ | Judges. | |
|---|---|---|
| 1325 | III, 27–30, | into a body on mount Ephraim, and slays 10,000 of the most valiant men of Moab: and the land resteth forty years, after the former rest obtained by Othniel |
| | 31. | After him, Shamgar, the son of Anath, slayeth 600 Philistines with an ox-goad, and he also avengeth Israel. |
| 1305 | IV, 1, 2, 3, | The Israelites, after the death of Ehud, returning to their old sin, are given up by God into the hands of Jabin, king of Canaan; and this thraldom of theirs continueth twenty years. |
| 1285 | 4. | Deborah, the wife of Lapidoth, a prophetess, who at this time judgeth Israel in mount Ephraim, and Barak, of the tribe of Naphtali, being made captain of the host of Israel, in sight of Megiddo, overcomes Sisera, captain of Jabin's army, whom Jael, the wife of Heber the Kenite, afterward kills in her own tent. For a |
| | V, 1–31. | memorial of which victory Deborah composeth a song; and the land resteth forty years after the former rest obtained by Ehud. |
| 1252 | VI. | The Israelites sinning again, are delivered into the hands of the |
| 1245 | | Midianites; which fourth thraldom lasteth seven years. Hereupon they cry unto God for help, and are reproved by a prophet. Then Gideon, the son of Joash, of Manasseh, is by an angel from God sent to deliver them. He first overturns the altar of Baal and burns his grove, and is called Jerubbaal. He, out of 32,000 |
| | VII. | men which came unto him, chooseth only (God so commanding) 300; but with them he puts to flight all the host of the Midianites, whom the Ephraimites afterward pursue, and slay their princes Oreb and Zeeb. Gideon having pacified the Ephraimites, who |
| | VIII, | complain that they were not called to the battle at first, passeth the river Jordan, and defeats the remainder of the Midianitish army; he chastiseth also the men of Succoth and Penuel, who had refused him victuals in his journey; and slays the two kings of the Midianites, Zebah and Zalmunna. After which great victories, the Israelites offering to settle the kingdom upon him and his posterity, he refuseth it; but receiving their golden ear-rings, he makes thereof an ephod, which afterward proves an occasion of idolatry. The Midianites being thus vanquished, the land enjoys rest forty years, after the former rest restored to them by Deborah and Barak. |
| 1238 | 33. | Gideon dieth, and the Israelites, falling back again to idolatry, worship Baal-berith for their god. |
| | IX, 1, 2, etc. | Abimelech, the son of Gideon (begotten upon his concubine), purposing to get to himself the kingdom which his father had re- |
| 1235 | | fused, slayeth seventy of his brothers all upon one stone; and having, by the help of the Shechemites, got to be made king, Jotham, the youngest son of Gideon, who only escaped Abimelech's fury, from the top of mount Gerizim expostulates with them the wrong they had done to his father's house; and, by way of a parable, foretells their ruin; which done, he flies, and dwells quietly in Beer. |
| 1233 | 22, | Abimelech, having reigned three years over Israel, Gaal, a Shechemite, conspires against him; which being discovered to |
| | 50. | him by Zebul, he utterly destroys the city of Shechem, and puts all the inhabitants to the sword, and burns the temple of their god Berith with fire; from thence he goeth and layeth siege to Thebez, |
| | 2 Sam. XI, 21. | where he is knocked on the head with a piece of a millstone, cast upon him by a woman from the walls, and then killed outright by his armor-bearer. |
| 1232 | Judges X, 1, | Tola, the son of Puah, after Abimelech, judgeth Israel twenty- |
| 1210 | 3, | three years. Jair the Gileadite succeeds Tola, and judgeth Israel twenty-two years. |
| 1206 | 6, | The Israelites, forsaking again the true God, fall to worship the gods of several nations, and are given up into the hands of the Philistines and Ammonites; which fifth thraldom lasteth eighteen |
| 1188 | 15. | years. Upon their repentance, and abandoning their idols, at length they obtain mercy. |
| 1187 | XI. | Jephthah the Gileadite, being made captain of the host of Israel, subdues the Ammonites; before the battle he vows his |
| | XII, 6, | daughter unaware to be offered in sacrifice, and afterward performs it. He puts to the sword 42,000 Ephraimites, who had behaved themselves insolently against him, and judgeth Israel six years. |

| Before Christ | | |
|---|---|---|
| 1182 | Judges. XII, 8, | Ibzan, the Bethlehemite, succeeds Jephthah, and judgeth Israel seven years. |
| 1175 | 11, | Elon the Zebulonite succeeds Ibzan, and judgeth Israel ten years. |
| 1164 | 13. | Abdon the Ephraimite succeeds Elon, and judgeth Israel eight years. |
| 1156 | 1 Samuel. IV, 18. Judges. XIII, 1, 2, | Eli the high priest (in whom the high priesthood was translated from the family of Eleazar to Ithamar's) succeeds Abdon, and judgeth Israel forty years. The Israelites again provoke the Lord to anger, and he delivers them into the hands of the Philistines. This sixth thraldom begins seven months after Eli's entering upon the government, and lasteth forty years, even till seven months after his death, when the ark was brought back again. |
| 1155 | 24. | Samson the Nazarite, as an angel had foretold, is born at Zorah. |
| 1137 | XIV. | Whilst Eli the high priest executeth the office of a judge in civil causes under the Philistines, Samson takes an occasion to quarrel with them, by marrying a woman of Timnath: for having on the day of his betrothing propounded a riddle to the Philistines, and laid a wager, his wife tells them the meaning of it; enraged hereat, he goes and slays thirty men of Askelon, and gives them the suits of raiment which he had stripped off their bodies, in performance of the wager which he had lost, and returns home to his father. |
| 1136 | XV. | Samson again in harvest-time goes to present his wife with a kid at her father's house, but finds her given away in marriage to another man; Samson resolves to be avenged; he catches 300 foxes, and tying firebrands to their tails, turns them all into the corn-fields of the Philistines, and into their vineyards, and olive-gardens, and sets them all on fire. The Philistines take Samson's wife and father-in-law, and burn them; Samson in revenge slays a great multitude of them, and sits down upon the rock Etam, from whence being taken by 3000 of the Jews, and by them delivered into the hands of the Philistines, he slays of them a thousand men with the jawbone of an ass; in which place he is miraculously refreshed, when thirsty and ready to faint. |
| 1117 | XVI. | Samson is betrayed by Delilah his concubine, bereaved of the hair of his Nazariteship, and delivered to the Philistines, who put out his eyes, and bind him with chains of brass. The Philistines gather together to offer sacrifice to Dagon their god, and Samson is brought to make them sport; whose hair being grown, and his strength in a great measure restored, he takes hold of the two chief pillars whereon the house stood (wherein were the princes of the Philistines, and a great multitude of people), and pulls down the house, killing more men at his death than he did in all his lifetime. So he died, having judged Israel in the days of the Philistines twenty years. |
| 1116 | 1 Samuel. IV. | The Israelites take up arms against the Philistines, but with very ill success, for they lose 4000 men in one battle. Then they send for the ark of the covenant from Shiloh, and cause it to be brought into the camp. The Philistines, seeing now all lie at stake, encourage one another to behave themselves like men that day; and so falling on, they slay of the Israelites 30,000 men. The ark of God is taken, and Hophni and Phinehas, priests, and sons of Eli, are slain. Of all which, when tidings are brought to old Eli, frighted thereat, he falls from his chair and breaks his neck, in the 98th year of his age. |
| | V. | The Philistines, having brought the ark into Ashdod, set it in the house of Dagon their god. But when Dagon had been found two several times fallen groveling before it, and broken in pieces, and the inhabitants of the place sorely plagued, they remove it from thence to Gath, and from thence to Ekron. But the same plagues and judgments following wherever it went, after seven months, by the advice of their priests, they send home the ark again, with presents and gifts, into the land of the Israelites, and it is brought to Beth-shemesh, where 50,070 men are smitten for looking into the ark. From hence it is carried to the house of Abinadab, in Kirjath-jearim, who sanctifieth his son Eleazar to keep it. |
| | VI. | |
| | VII. | |
| 1096 | | After twenty years the Israelites, by Samuel's persuasion, |

| Before Christ | | |
|---|---|---|
| | 1 Samuel. | |
| 1096 | VII, 13. | solemnly repent at Mizpeh, and, upon their conversion, God by thunder from heaven delivers them from the invasion of the Philistines, who are subdued, the hand of the Lord being against them all the days of Samuel. |
| 1095 | VIII. | Samuel, being grown old, takes for his assistance in the government his sons, by whose ill management of affairs the Israelites require a king to be given them: whereupon God gives them a king in his wrath, to wit, Saul, the son of Kish, after Samuel had judged Israel twenty-one years. Saul is privately anointed by Samuel, and afterward publicly proclaimed king at Mizpeh. |
| | Hosea XIII, 10. | |
| | 1 Samuel. XI, | |
| | 15. | About a month after Jabesh-gilead is besieged by Nahash, king of the Ammonites, and the siege raised by Saul: whereupon the whole congregation of Israel, coming together at Gilgal, again proclaim Saul king. |
| 1085 | XVII, 12. | David, the son of Jesse the Ephrathite, born at Beth-lehem-judah, thirty years before he succeeded Saul in the kingdom. He was his father's youngest son. |
| 1063 | XVI, 1. | God rejects Saul, and sends Samuel to Beth-lehem, there to anoint David king, whom Saul ever after extremely persecuteth. |
| | XVIII. | Yet Jonathan, Saul's son, loveth him, and oftentimes rescueth him from Saul's cruelty. |
| | XXIV. | David, having Saul twice in his power, forbears to hurt him. |
| | XXVI. | |
| 1060 | XXVII. | David, fearing he may some time or other fall into the hands of |
| 1056 | | Saul, flies to Gath under king Achish, carrying with him 600 men; and having obtained of him the town of Ziklag to dwell in, he continueth one year and four months in the land of the Philistines: from whence he invadeth the countries of the Geshurites, Gezrites, and Amalekites, and puts to the sword all, both men and women, not leaving one alive to carry the news thereof to king Achish. |
| 1055 | XXVIII. | Achish, proposing to make war upon the Israelites, takes David |
| | 1 Chron XII. | along with him in that expedition, to whom, whilst he is upon his march with his 600 men, repair a great many others of the tribe of Manasseh, and join with him. |
| | 1 Samuel. XXVIII. | Saul, seeing the army of the Philistines, is in great fear, and (Samuel being now dead) goes to En-dor to consult with a witch there; the woman raiseth an apparition of Samuel, and Saul receives from it that dreadful doom, The Lord will deliver Israel, together with thyself, into the hands of the Philistines. |
| | XXIX. | The princes of the Philistines growing jealous of David, he and his company early the next morning leave the army, and return to Ziklag. |
| | XXXI. | The armies join battle, and the Israelites are defeated; the three sons of Saul are slain, and he himself falls on his own sword. |
| | 2 Samuel. I. | Three days after, an Amalekite brings Saul's crown, and the bracelet that was upon his arm, and presents them to David, professing that, finding him fallen upon his sword, he had killed him outright, and taken the crown from off his head: whereupon |
| | II. | David causeth him to be put to death for stretching forth his hand to slay the Lord's anointed, and lamenteth the death of Saul and Jonathan his son in a funeral song. David, having asked counsel of God, goes up to Hebron with those that are about him, where |
| | 1 Chron. XII, 23. | he is anointed king by the men of Judah, his own tribe, in the 30th year of his age; and there he reigns seven years and six months. |
| | 2 Samuel. II, 8, | Abner, who was captain of the host of Saul, carries Ishbosheth, Saul's son, to Mahanaim, and there makes him king over the rest of Israel. |
| 1053 | 12. | After two years there arise frequent and mortal skirmishes between a party of men on David's side, headed by Joab, David's nephew, and another party on Ishbosheth's side, whereof Abner is chief; but the former still grows stronger and stronger. |
| 1048 | III, 6, | Abner, affronted by Ishbosheth, revolteth to David, and deals with the chief men of Israel to transfer the whole kingdom unto him, and this in the hearing of the Benjamites. |
| | 22. | He comes to David, and is kindly received; returning, he is treacherously murdered by Joab. David much laments his untimely death, and buries him at Hebron. |
| | IV. | Baanah and Rechab murder their lord and master Ishbosheth, as he lieth resting himself upon his bed. They bring his head to |

| Before Christ | | |
|---|---|---|
| | | Samuel. |
| 1048 | IV. | David, who in detestation of their treason causeth them immediately to be put to death. |
| | V. | The captains and elders of all the tribes, coming to Hebron, |
| | 1 Chron. XI. | anoint David a third time, and make him king over all Israel. |
| 1047 | 2 Sam. V, 5, 6, 7, 9. | David with all Israel marcheth to Jerusalem against the Jebusites, and taketh the fort of Zion, and calls it the city of David, and making Jerusalem the seat of his kingdom, reigneth there over all Israel 33 years. |
| 1045 | VI. | The ark of the covenant, which in the first sabbatical year was |
| | 1 Chron. XVI. | brought from Gilgal to Shiloh, is this year, being also a sabbatical |
| | 2 Chron. I, 4. | year, brought from Kirjath-jearim, out of the house of Abinadab, and placed at Zion; 30,000 choice men of Israel attending it, and singing the 68th Psalm. |
| 1044 | 2 Sam. VII. | David now dwelling in his house of cedar, which he had built, and living in a full and perfect peace, imparteth to Nathan the |
| | 1 Chron. XVII. | prophet his purpose of building a house for God; but is answered |
| | XXII. | from God, that this was a work which should be done, not by him, |
| | 2 Sam. VIII. | because he was a man of blood, and trained up in war, but by his |
| | 1 Chron. XVIII. | son Solomon, a man of peace, which should be born unto him. |
| | Gen. XV, 18. | The time which passeth from hence till the birth of Solomon is |
| | Deut. XI, 24. | spent in wars, wherein David subdues the Philistines, Edomites, Amalekites, Moabites, Ammonites, and Syrians, and extends his kingdom to the utmost bound of that land which had been promised to the seed of Abraham, and never possessed by any of them, save |
| | 1 Kings IV. | only by David and his son Solomon. |
| 1035 | 2 Sam. XI. | At the end of this year Joab, going with the army against the |
| | 1 Chron. XX. | Ammonites, besiegeth Rabbah, the metropolis of Ammon, whilst David takes his ease at Jerusalem, and there commits adultery with Bathsheba, the wife of Uriah the Hittite, who was then in the army, whom he also procures to be slain. |
| 1034 | 2 Sam XII, 25. | The child so gotten in adultery is born. David is convicted by Nathan the prophet of his sin, and he repents; in testimony whereof he composeth the 51st Psalm. The child dieth. |
| 1033 | 1 Chron. XXII, 9. | Bathsheba becomes now David's wife, and beareth him a son, unto whom, as unto one who should prove a man of peace, God gives the name of Solomon; and, as to one beloved of the Lord, the name of Jedidiah. |
| 1032 | 2 Sam. | Amnon, David's eldest son, defloureth his sister Tamar. |
| 1030 | XIII. | Absalom avengeth his sister Tamar, and killeth his brother Amnon; for which thing he fleeth to Geshur in Syria, where he continues three years with king Talmai, his grandfather by the mother's side. |
| 1027 | XIV. | After three years' exile he returns to Jerusalem, where he con- |
| 1025 | | tinues two years, before the king his father admits him into his presence, and is reconciled to him. |
| 1024 | XV, | This rebel son having got chariots and horses, and a guard to attend him, insinuates himself into the favor of the people, and steals away their hearts from his father David. |
| 1023 | 7. | The next year following, under pretence of a vow, he obtaineth leave to go to Hebron, where, by Ahithophel's counsel, he breaks out into open rebellion, and forceth his father to fly from Jerusalem. |
| | XVII. | Ahithophel, because his counsel in all matters is not followed by Absalom, hangs himself. |
| | XVIII. | Absalom having lost 20,000 men, fleeth, and a bough of an oak catching hold of him, he there hangs, and is run through by Joab. |
| 1017 | XXIV. | David, tempted by Satan, commandeth Joab to number the people: God, offended thereat, sends a prophet to put three plagues to his choice, *viz.*, the famine, sword, or pestilence. |
| | 1 Chron. XXI. | David chooseth to fall into the hands of a merciful God, rather than into the hands of men. So God sends a pestilence, whereof 70,000 men die in one day. The angel being about to destroy Jerusalem, God bids him hold his hand; for he beholds David repenting in sackcloth, and entreating him to spare the innocent people, and to turn his hand upon himself, and upon his father's house. |
| | 1 Kings. | |
| 1016 | XIV, 21. | Rehoboam is born unto Solomon by Naamah, an Ammonitish woman. |
| 1015 | 1 Kings I. | David being now 70 years of age, and broken with continual cares and wars, grows so weak and feeble that clothes can no |

| Before Christ | | |
|---|---|---|
| 1015 | 1 Kings. I. | longer preserve heat in him. Therefore, Abishag, a young virgin, is appointed to keep him warm. Adonijah, seeing his father thus declining, by the assistance of Joab and Abiathar, makes himself king: which David understanding, he presently commands Zadok the priest, and Nathan the prophet, with other great men, to anoint Solomon king. Adonijah hearing this, betakes himself to the sanctuary, and is pardoned. |
| | II. | David, having given instruction to his son Solomon, dieth, after he had reigned in Hebron seven years and six months, and 33 years in Jerusalem over all Israel. |
| 1014 | III, 1. 2 Chron. VIII, 11. | Pharaoh, king of Egypt, gives his daughter in marriage to Solomon. The Lord appears to Solomon in a dream, and bids him ask what he will, and it shall be given him. Solomon asketh wisdom: God gives him wisdom from above, and adds thereunto riches and honor. |
| | 1 Kings. III, 5. | Of this divine wisdom Solomon makes an eminent manifestation in judging between two harlots. |

## THE FIFTH AGE OF THE WORLD.

| | | |
|---|---|---|
| 1012 | VI, 1. 2 Chron. | SOLOMON layeth the foundation of the temple in the 480th year after the departure of the children of Israel out of Egypt. |
| 1005 | III, 1. 1 Kings. | Solomon's temple finished in the eleventh year of his reign, having been seven years and a half in building. |
| 1004 | VI, 38. VIII. 2 Chron. V, VI, VII. | Solomon this year (being the 9th Jubilee, and opening the fourth Millenary of the world) with great magnificence celebrates the dedication of the temple: at which time God giveth a visible sign of his favor. |
| 975 | 1 Kings XI. 2 Chron. IX. | Solomon having, as it is with reason believed, forsaken his lusts and vanities, to which he had been too intemperately addicted, and written, as a testimony of his repentance, his book called the Preacher, dieth. He reigned 40 years. |
| | 1 Kings. XII, | The Israelites assemble at Shechem to crown Rehoboam, Solomon's son, king over all Israel. The people by Jeroboam sue unto him for a removal of some grievances; to whom Rehoboam, by the advice of young men, returning a harsh answer, alienates the hearts of ten tribes from him, who make Jeroboam king over them, and fall at the same time from the house of David, and from the true worship of God. |
| | 25. | Jeroboam, in the beginning of his reign, repairs Shechem, destroyed by Abimelech 258 years before, and there dwells; afterward going over Jordan he builds Penuel, and at length makes Tirzah the seat of his kingdom. But fearing lest his new subjects, by going to Jerusalem to worship, may be induced to revolt from him, he deviseth a new form of religion, setting up two golden calves, the one at Beth-el, the other at Dan, for the seduced people to bow down unto. |
| | XIV, 17. XII, 28. | |
| | XIV. 2 Chron. XII. | From the time of this dismal rent Rehoboam reigneth over Judah and Benjamin 17 years, and Jeroboam over Israel, or the other ten tribes, 22 years. |
| 974 | XI, 17. | The Priests and Levites, and other Israelites who feared God, stick to Rehoboam, and maintain the kingdom of Judah three years; after which time Rehoboam falls to idolatry, and walketh no more in the ways of David and Solomon. |
| | 1 Kings. XII, 32. XIII, 2. | Jeroboam sacrificing to his calf at Beth-el, a prophet is sent unto him from God, who foretells the judgment which should one day be executed upon that altar, and the Priests (*viz.*, those whom Jeroboam had made of the lowest of the people) that served at it. Which prophecy then and there is confirmed by signs and wonders upon the king himself, and upon the altar. |
| 971 | XIV, 25. 2 Chron. XII. | Shishak, king of Egypt, spoileth Jerusalem and the temple; but the king and the princes repenting at the preaching of Shemaiah the prophet, God gives them not over to utter destruction. |
| 958 | 1 Kings. XV. | Abijam, the son of Rehoboam, succeeds his father in the kingdom of Judah; and reigns three years. |
| 957 | 2 Chron. XIII. | He obtains a great victory over Jeroboam, killeth 500,000 men in one battle, and taketh Beth-el. |
| 955 | 1 Kings. XV, 8, | Asa, in the twentieth year of Jeroboam, succeeds his father Abijam, and reigns 41 years. |

| Before Christ | | |
|---|---|---|
| 954 | 1 Kings. XV, 25, | Nadab, in the second year of Asa, succeedeth his father Jeroboam in the kingdom of Israel, and reigneth not full two years. |
| 953 | 27. | Nadab, at the siege of Gibbethon (a town of the Philistines), is slain by Baasha, of the tribe of Issachar, in the third year of Asa; and the same year, having made himself king over Israel, he utterly destroyeth the whole race of Jeroboam, and reigneth 24 years. At this time lived the prophets Jehu, Hanani, and Azarias. |
| 951 | 2 Chron. XIV, | Asa destroyeth idolatry, and enjoying ten years of peace, strengthens his kingdom with forts and a standing army. |
| 941 | 9, | Zerah the Ethiopian, with an innumerable army, invadeth Judah: Asa overcomes him, sacrificeth to God of the spoil, and maketh a solemn covenant with God. He also deposeth Maachah his grandmother, a great patroness of idolatry; bringeth into the temple those things which his father and himself had consecrated unto God, and enjoys a long peace. |
| | XV. | |
| 930 | 1 Kings. XVI, 6, 8, | Elah, the son of Baasha, succeeds his father in the kingdom of Israel. |
| | 9, | In the second year of his reign, and the twenty-seventh of Asa's, Zimri, one of his captains, conspires against him, kills him, and |
| 929 | 11, | reigneth in his stead. As soon as he sits on the throne, he destroyeth the whole family of Baasha; but the army which then |
| | 18, | lay before Gibbethon makes Omri then king, who presently besiegeth Tirzah, and taketh it; which Zimri seeing, he sets on fire the king's palace, and perisheth in the flames. |
| | 21, | The people of Israel are now divided into two factions; one follows Tibni, the son of Ginath, and endeavors to make him king; |
| 925 | 22, | the other adheres to Omri; but Tibni dying, Omri reigns alone, in the 31st year of Asa. |
| 924 | 23, 24, | Omri having reigned six years in Tirzah, removes the seat of his kingdom to Samaria, a place which he himself had built. |
| 918 | 29. | Ahab succeeds his father in the kingdom of Israel, and reigneth 22 years in Samaria. He did evil in the sight of the Lord above all that were before him. |
| 914 | XXII, 41. | Jehoshaphat succeedeth his father Asa in the fourth year of |
| 912 | 2 Chron. XX, 31. XVII, 7. | Ahab, king of Israel, and reigneth 25 years in Jerusalem. Jehoshaphat being settled in his kingdom, and having demolished the high places and groves, in the third year of his reign he sends Levites with the princes to instruct the people in the law. God in the meantime subdueth his enemies under him. |
| 907 | 1 Kings. XX. | Ben-hadad, king of Syria, layeth siege to Samaria, who by the direction of a prophet is beaten off, and a vast number of the Syrians slain. |
| 899 | XXI. | Ahab not being able to persuade Naboth to sell him his vineyard, falls sick upon it; Jezebel, his wife, suborning false witnesses to accuse him of blasphemy, causeth Naboth to be stoned, and puts the king in possession of the vineyard. Whereupon the prophet Elijah denounceth judgments against Ahab and Jezebel; wicked Ahab repenting, God defers the judgment. |
| 898 | XXII, 51. | Ahab, in the seventeenth year of the reign of Jehoshaphat, maketh his son Ahaziah his associate in the government of his kingdom. |
| | 2 Kings. III, 1. I, 17. | Jehoshaphat also maketh Jehoram his son copartner with him; whence it is, that Jehoram, the son of Ahab, who succeeded his brother Ahaziah in the kingdom of Israel, in the eighteenth year of Jehoshaphat, king of Judah, is said to have begun his reign in the second year of Jehoram, the son of Jehoshaphat. |
| 897 | 1 Kings. XXII. 2 Chron. XVIII. | Ahab having got Jehoshaphat to assist him in the siege of Ramoth-gilead, before he goes, he asketh counsel of 400 false prophets, who promise him victory and success; but, by Jehoshaphat's advice, Micaiah, a true prophet of God, is consulted, who foretells his overthrow, and according to his word Ahab is slain at Ramoth-gilead, and buried at Samaria. |
| | 2 Kings. I, 1 III, 5. 2 Sam. VIII, 2. 2 Kings I. | Ahab being dead, the Moabites revolt from Israel, who had continued in subjection ever since king David's days. Ahaziah, king of Israel, lying ill of a fall, sends to consult Baalzebub, the god of Ekron, concerning his recovery. Elijah the prophet meeteth the messenger, and telleth him Ahaziah shall surely die; whereupon two captains, with over fifty men apiece, are sent to apprehend him, and bring him before the king; Elijah |

| Before Christ | | |
|---|---|---|
| 896 | 2 Kings. I. | calleth for fire from heaven, and destroyeth both them and their companies. A third captain, with his fifty men, being sent, and behaving himself submissively, Elijah goes along with him; the prophet certifies the king that he shall not come down from his bed alive. So Ahaziah dieth, having governed (partly by himself, and partly together with his father) two years. |
| | 1 Kings. XXII. | |
| | 2 Kings. III, 1. | Jehoram succeedeth his brother Ahaziah in the kingdom of Israel in the latter end of the eighteenth year of Jehoshaphat, and reigneth twelve years. |
| | II, 11. | Elijah is taken up into heaven in a fiery chariot. |
| | 2 Chron. | Jehoshaphat, grown old, gives to his sons many gifts, with fenced |
| 892 | XXI, 2, 3. | cities in Judea; but his eldest son, Jehoram, he now more absolutely investeth with the throne of the kingdom, in the fifth year of Jehoram, king of Israel. |
| | 2 Kings. VIII, 16. | Jehoram now, by the death of his father, has the kingdom of Judah to himself, which he holds four years. He is no sooner |
| 889 | 2 Chron. XXI, 4, 5. Genesis. XXVII, 40. | settled in his throne, but he puts all his brethren to the sword, with many of the princes of Israel. At this time the Edomites, who ever since king David's time had lived in subjection to Judah, revolt, and (as it was foretold by Isaac) they forever shake off his yoke; Libnah also, a city of the priests in the tribe of Judah, falls off from him about this time. |
| | 2 Chron. | Jehoram, following the counsel of his wicked wife Athaliah, the |
| 888 | XXI, 10, 11, | daughter of Ahab, king of Israel, sets up in Judah, and even in Jerusalem itself, the idolatrous worship of Baal, and compels his |
| | 12. | subjects thereto; a letter which was left for him by Elijah the prophet comes to his hands, which reproves him, and denounces all those calamities and punishments which afterward befell him. |
| | 2 Kings. | Ahaziah succeeds his father in the kingdom of Judah (having |
| 885 | VIII, 25, | had part of the government bestowed upon him the year before), in the 12th year of Jehoram, king of Israel, and reigneth one year in Jerusalem. |
| | | Jehoram, king of Israel, and Ahaziah, king of Judah, lead their armies to Ramoth-gilead against Hazael, who had newly succeeded Ben-hadad in the kingdom of Syria: Jehoram is danger- |
| 884 | 28. | ously wounded, and retires, himself, to Jezreel to be cured. In the |
| | IX. | meantime Elisha sendeth a young prophet with instructions to anoint Jehu, the son of Jehoshaphat, the son of Nimshi, at Ramoth-gilead, king over Israel, and to open to him the will of God for the rooting out of the house of Ahab; who, being proclaimed king by the soldiers, marcheth straight to Jezreel, killeth Jehoram in the field of Naboth, and causeth Jezebel to be cast out at a window, where she is eaten by dogs. He dispatcheth letters |
| | 2 Kings. X. | also to Samaria, and causeth seventy of Ahab's children to be beheaded. Then taking with him Jehonadab, the son of Rechab, he comes himself to Samaria, and destroys the whole family of Ahab, and all the priests of Baal. Nevertheless, having put down the worship of Baal, he departs not from the worship of Jeroboam's golden calves, but maintains that idolatry all the time of his reign, which was 28 years. |
| | IX. | Jehu proceeds further, and executes the divine vengeance upon |
| | X. | the idolatrous house of Judah; he pursues Ahaziah, who fled toward Megiddo, and overtaking him at Gur, causeth him to be killed in his chariot. Going also to Samaria, he meeteth with 42 of Ahaziah's kinsmen, whom he causeth to be slain. |
| | XI. | Athaliah, the daughter of Ahab, seeing her son Ahaziah dead, |
| | 2 Chron. XXII, 10. | usurps the kingdom, destroying those that had right to the succession; but Jehosheba, the daughter of king Jehoram, and wife to Jehoiada the high priest, takes Jehoash, being then an infant, and son to her brother Ahaziah, and hides him in the temple, and so saves him from that massacre which was made of the rest of the blood royal. |
| 878 | 2 Kings. XI. | Jehoiada, the high priest, brings out Jehoash, now seven years |
| | 2 Chron. XXIII. | old, and anoints him king; causeth Athaliah to be slain, and restoreth the worship of the true God, destroying the house of Baal, and commanding the idolatrous priest Mattan to be killed before his altars. Jehoash now beginning his reign, in the seventh |
| 857 | 2 Kings. XII, 7. | year of Jehu, reigneth 40 years in Jerusalem. |
| | | Jehoash, in the 23d year of his reign, giveth order for the repair |

| Before Christ | | |
|---|---|---|
| | 2 Kings. | |
| 857 | XII, 7. | of the temple, committing the charge thereof to Jehoiada the high priest. |
| | XIII, 1. | Jehoahaz succeedeth his father Jehu in the kingdom of Israel, and reigneth 17 years: during all which time Hazael, king of Syria, oppresseth him, and exerciseth all those cruelties upon the Israelites which Elisha the prophet had foretold. |
| | VIII, 12. | |
| 841 | XIII, 10. | Jehoash, the son of Jehoahaz, king of Israel, is taken into the consortship of that kingdom by his father, in the 27th year of Jehoash, king of Judah, and reigneth 16 years. |
| 840 | 2 Chron. XXIV, 21. | Zechariah, the son of Jehoiada the high priest, for reproving the people of Judah that fall to idolatry after the decease of Jehoiada, is stoned to death in the court of the house of the Lord by the commandment of king Jehoash, who the next year after is murdered by some of his servants, as he lay in his bed; and Amaziah his son succeedeth him. |
| | 2 Kings. XII, 20. | |
| 839 | XIII. | Jehoahaz dieth, and Jehoash his son succeedeth in the kingdom of Israel. Not long after his father's funeral he visits Elisha the prophet, then lying sick, and with many tears asketh counsel of him, who promiseth him victory over the Syrians. A dead man is brought to life by being laid in Elisha's grave. |
| 836 | XV, 1. | Jeroboam the second is this year taken into the consortship of the kingdom of Israel by his father Jehoash, going to war against the Syrians. This is gathered from Azariah king of Judah's beginning to reign in the 27th year of this Jeroboam. |
| 826 | XIV. | Amaziah, king of Judah, growing proud upon a victory obtained |
| | 2 Chron. XXV. | against the Edomites, this 14th year of his reign, provoketh Jehoash, king of Israel, to battle. Jehoash overcomes him, and takes him prisoner, breaks down 400 cubits of the wall of Jerusalem, and, having spoiled the temple and the king's house of a vast treasure, returns to Samaria. |
| 825 | 2 Kings. XIV, 16. | Jehoash dies, fifteen years before Amaziah, and Jeroboam the second, his son, reigneth in Samaria 41 years. |
| 810 | 2 Chron. XXV. | Amaziah, finding a conspiracy against him at Jerusalem, flies to Lachish, where he is murdered; after whom comes his son Uzziah, |
| | 2 Kings. XV. | or Azariah, in the 27th year of Jeroboam the second, and reigneth 52 years in Jerusalem. |
| 808 | | Now is held the 13th Jubilee, under the two most flourishing kings; in whose times live sundry great prophets in both kingdoms; Isaiah and Joel in Judah; Jonas, Hosea, and Amos, in Israel. |
| | XIV, 25. | Jonas of Gath-hepher, a town belonging to the tribe of Zebulon |
| | Isa. IV, 1. | in Galilee of the Gentiles (observe here the blindness of the Pha- |
| | Jonah III. | risees, *John* vii, 52), was afterward sent into Nineveh, the metropo- |
| | Matthew. XII, 41. | lis of Assyria, where both king and people at his preaching repented. |
| 784 | 2 Kings. XIV, 29. | Jeroboam, king of Israel (under whom that kingdom came to its full height of glory), dieth; after his death all things fall into confusion, and the state is reduced to a plain anarchy, which lasteth 11 years and a half; for such an interregnum or vacancy the synchronism of Kings requires, that the six months of Zachariah, the son of Jeroboam, may answer the 38 years and one month of Shallum, who murdered him, in the 39th year of Azariah, or Uzziah, king of Judah. |
| 773 | XV, 8, | Zachariah, the son of Jeroboam, the fourth and last of the race of Jehu (as was foretold), begins his reign over Israel, in the 38th year of Azariah, or Uzziah, king of Judah, and reigneth six months. |
| 772 | 10. | Shallum, the son of Jabesh, at the end of six months, murders him in the sight of the people, and reigns one month, in the 39th year of Uzziah, king of Judah. After Zachariah's death follow |
| | Amos. VII, 9. | those direful calamities foretold by Amos the prophet. |
| | 2 Kings. XV, 14, | Menahem, the son of Gadi, going from Tirzah to Samaria, killeth Shallum, wasteth Tiphsah and the borders thereof, and because the town would not open to him, he takes it, and rips up all the women with child. |
| 771 | 19, | While Menahem in these broils labors to get the possession of the kingdom, Pul, king of Assyria, invadeth his country, to whom Menahem giveth 1000 talents of silver, and afterward reigneth quietly 10 years. |

| Before Christ | | |
|---|---|---|
| 761 | 2 Kings. XV, 23, | Pekahiah succeedeth his father Menahem, in the 50th year of Uzziah, king of Judah, and reigneth 2 years. |
| 759 | 25, 27, | Pekah, one of his captains, kills him in his own palace at Samaria, and reigneth 20 years. |
| 758 | 32. | Jotham succeedeth his father Uzziah in the kingdom of Judah, at the age of 25 years, and reigneth 16 years in Jerusalem. |
| | 2 Chron. XXVII, 5. Mic. I, 1. | Jotham subdues the Ammonites, and makes them tributary for 3 years. Under him and his two successors the prophets Micah and Hosea execute their prophetical office. About this time lived the prophet Nahum, and prophesied the destruction of Nineveh. |
| 742 | 2 Kings. XVI, 1. 2 Chron. XXVIII, 1. Isa. VII. | Ahaz succeedeth his father Jotham, in the 17th year of Pekah, king of Israel, and reigneth 16 years. This year Rezin, king of Syria, and Pekah, king of Israel, are confederate against Judah, which strikes a great terror into that nation; but unto Ahaz, God, by the prophet Isaiah, sends a gracious message, with a promise of deliverance; for a sign whereof (when the incredulous king, being bid to ask a sign, refused to do it) God gives him the promise of Immanuel to be born of a virgin. Rezin and Pekah now lay siege to Jerusalem, and therein to Ahaz, but are beaten off; Ahaz is no sooner delivered from his enemies |
| 741 | | but he forsakes God his deliverer, and falls to idolatry. Wherefore God gives him over into the hands of the king of Israel, who slays of the men of Judah 120,000 in one day, with a great many of the nobility, and carrieth away 200,000 captives; but these, by the advice of the prophet Obed, are released and sent home. |
| 739 | 2 Kings. XV, 30. | Hoshea, the son of Elah, murders Pekah, king of Israel, and gets the kingdom into his own hands, it is said, in the 20th year of Jotham, that is, from the time that Jotham first began to reign, which is the same with the 4th of Ahaz his son. Hoshea, by reason of the tumults and disorders which ensued, cannot be said |
| 730 | | to have reigned till 9 years after, the state continuing all that time in great confusion, without any form of government. |
| 728 | XVII, 3. | Shalmaneser, king of Assyria, comes up against Hoshea, and makes him to serve him, and pay him tribute. |
| 726 | XVIII, 1. 2 Chron. XXIX. XXX. XXXI | Hezekiah succeedeth his father Ahaz in the kingdom of Judah: he destroyeth idolatry, and prospers: he also celebrates a solemn passover, and reigneth 29 years in Jerusalem; his father had made him, in the last year of his reign, his assistant in the government. |
| 725 | 2 Kings. XVII, 4. | Hoshea, king of Israel, having consulted with So, king of Egypt, refuseth to pay tribute to Shalmaneser: provoked hereby, and |
| 724 | | jealous of some further design in that confederacy of Hoshea with the king of Egypt, Shalmaneser layeth siege to Samaria, and toward the latter end of the third year taketh it, and carrieth |
| 721 | | away the Israelites captive into his own country. This was the end of the kingdom of Israel, when it had stood divided from the kingdom of Judah 254 years. |
| 713 | XVIII. | Sennacherib, king of Assyria, coming up against Judah, besiegeth their fenced cities, and taketh many of them, but is pacified by a tribute. |
| | XX. | About this time Hezekiah falls sick, and is told by Isaiah that he shall die, but pouring out his tears and prayers unto God, he recovereth his health, and obtaineth a prolongation of his life and |
| | Isaiah. XXXVIII. | kingdom for 15 years. For a sign whereof the sun goes ten degrees backward. |
| 713 | 2 Kings. XIX. | Sennacherib, not observing the articles of peace, layeth siege to Jerusalem, and sendeth a blasphemous letter to Hezekiah; which |
| | Isaiah. XXXVII. | he opening, and spreading before the Lord in the temple, with many tears, craves assistance from God against the Assyrians. Whereupon the prophet Isaiah assures him that God will deliver him, and defend that city. The self-same night an angel of the Lord slays 185,000 men in the Assyrian army; and the next morning Sennacherib departeth, and returns to Nineveh; where not long after, whilst he is worshiping in the house of Nisroch his god, he is slain by his own sons. |
| 698 | 2 Kings. XXI. 2 Chron. XXXIII. | Manasseh, at 12 years of age, succeedeth his father Hezekiah, and reigneth 55 years. He setteth up idolatry, and sheddeth much innocent blood. Wherefore God delivers him up into the hands of the Assyrians, who in the 22d year of his reign carry him |

| Before Christ | | |
|---|---|---|
| 677 | 2 Chron. XXXIII. | away captive to Babylon: but upon his repentance God restores him to his liberty and kingdom. |
| 656 | Judith. XIII. | This year Nabuchodonosor, king of Assyria, purposing to make himself universal monarch, sends Holofernes, his general, against Judea, who layeth siege to Bethulia, and there hath his head taken off by Judith, a woman of the tribe of Simeon. |
| 643 | 2 Kings. XXI, 19. 2 Chron. XXXIII, | Amon, aged 22 years, succeedeth his father Manasseh, and reigneth two years. An idolater indeed, as his father, but no penitent: he is murdered by his own servants. |
| 641 | 21, 22. 2 Kings. XXII, 1. | Josiah, a child of 8 years old, succeedeth his father Amon, and reigneth 31 years. In his time lived Jeremiah and Zephaniah the prophets, and Huldah the prophetess. |
| 630 | 2 Chron. XXXIV. | In the 12th year of his reign he begins a reformation in Judah and Jerusalem, and carries it on successfully. |
| 624 | | This year he giveth order for the repair of the temple. Hilkiah the high priest, having found a book of the law, sends it to the king, who hears it read all over to him, and thereupon asketh counsel of Huldah the prophetess, who prophesieth the destruction of Jerusalem, but not in his days. Josiah, calling to him the elders of Judah and Jerusalem, with the priests and prophets, causeth the book of the law to be read over before all the people, and reneweth the covenant between God and his people; he burneth also dead men's bones upon the altar at Beth-el, as was foretold, and keepeth a most solemn passover. |
| | 2 Kings. XXIII. 2 Chron. XXXIV. | |
| 610 | 2 Kings. XXIII, 29. Zech. XII, 11. | At this time a war breaks out between the king of Egypt and the king of Assyria. Josiah unadvisedly engageth in the war against Necho, king of Egypt, and is slain in the valley of Megiddo. The good king being thus taken out of the world, whose life only kept off the Babylonish captivity from that nation, not only the people then living bewailed his death, but even in after-time a public mourning for him was kept. The prophet Jeremy also, in remembrance thereof, composeth his Lamentations, wherein, bewailing the calamities which were shortly to befall that people, as present before his eyes, in a most compassionate manner he points, as it were with his finger, at the death of Josiah as the source and original of all those ensuing miseries. |
| | 2 Chron. XXXV, 25. Lam. IV, 20. | |
| | 2 Kings. XXIII. 2 Chron. XXXVI, | After the death of Josiah, the people anoint Jehoahaz, one of his younger sons, to be their king. After three months' reign, he is deposed by Pharaoh Necho, who makes Eliakim, his elder brother, king over Judah and Jerusalem, and changes his name into Jehoiakim; but Jehoahaz he carries along with him captive into Egypt, where he ends his days. |
| | 5. | Jehoiakim, at 25 years of age, begins to reign, and he reigneth 11 years. |
| 609 | Jer. XXVI. | Uriah and Jeremiah prophesy against Jerusalem; the former is put to death, the latter is acquitted, and set at liberty. About this time Habakkuk also prophesieth. |
| 607 | XXV, 1 | This year is Nebuchadnezzar the Great made, by his father, Nebopolazzar, his associate in the kingdom of Assyria and Babylon; into whose hands God delivers up Jehoiakim, who is put in chains, to be carried to Babylon; but upon his submission and promises of obedience is left in his own house, where he lives a servant to Nebuchadnezzar 3 years. From which entering of the king and people of the Jews into the subjection and service of Nebuchadnezzar are the 70 years of the captivity of Babylon to be reckoned, which were foretold by the prophet Jeremy. |
| 606 | 2 Chron. XXXVI, 6. Jer. XXV, 11. XXIX, 10. Daniel. I, 3, 7. Isaiah. XXXIX, 7. | Nebuchadnezzar gives order to Ashpenaz, master of the eunuchs, that he shall carry from thence of the children of Israel, both of the blood royal (as was foretold by the prophet Isaiah to Hezekiah) and also of the nobility, the choicest youths, both for beauty and wit, that he can find; who, being educated 3 years in the language and sciences of the Chaldeans, may afterward be fit to serve the king in his palace; among whom, of the tribe of Judah, are Daniel, called Belteshazzar; Hananiah, called Shadrach; Mishael, called Meshach; and Azariah, called Abed-nego; their names being thus changed by the master of the eunuchs. |
| 605 | | Whilst Nebuchadnezzar pursues his victories over the king of Egypt his father dies, which coming to his knowledge, he gives order for the bringing away of the captives, and posts with a |

| Before Christ | | |
|---|---|---|
| 605 | | small company the nearest way to Babylon, where he is received |
| | Dan. I, 2. | as the lawful successor to his father's dominions. He causeth |
| | 2 Chron. | to be brought to Babylon what he thinks fit of the vessels and fur- |
| | XXXVI, 7. | niture of the temple, and placeth them in the house of his god, |
| | | *viz.*, Belus. |
| 603 | 2 Kings. | Jehoiakim, having lived 3 years in subjection to the king of |
| | XXIV, 1. | Babylon, falls off, and rebels against him. |
| | Dan. II. | This year (being the second of Nebuchadnezzar's reign, taking |
| | | it as begun at his father's death) Daniel recovers Nebuchad- |
| | | nezzar's dream, and interprets it to betoken the four chief mon- |
| | | archies; whereupon he and his companions are highly ad- |
| | | vanced. |
| 600 | 2 Kings. | Nebuchadnezzar sends an army, consisting of Chaldeans, |
| | XXIV, 2. | Syrians, Moabites, and Ammonites, against Jehoiakim; these |
| | | waste the whole country of Judea, and carry away from thence |
| 599 | Jer. | 3023 captives. Jehoiakim also is taken prisoner, whom they put |
| | XXII, 18. | to death, cause his carcass to be drawn out at the gate of Jerusa- |
| | XXXVI, | lem (as was foretold by the prophet Jeremiah), and leave it with- |
| | 30. | out the walls unburied. |
| | 2 Kings. | Jehoiachin (called also Conias and Jeconias), at 18 years of age, |
| | XXIV, 8. | succeeds his father Jehoiakim, and reigns three months in Jeru- |
| | | salem. |
| | 2 Chron. | Against him Nebuchadnezzar leads an army, and besiegeth |
| | XXXVI, 9. | Jerusalem: Jehoiachin, with all his kindred and courtiers, come out |
| | | to meet him. Nebuchadnezzar makes them all prisoners, enters |
| | | Jerusalem, and takes all the treasure he can find in the temple and |
| | | the king's palace, breaking in pieces all the vessels of gold and |
| | Isaiah. | furniture which Solomon had made for the temple; he carrieth |
| | XXXIX, 6. | away captive to Babylon the king, his mother, wives, courtiers, |
| | Jer. | magistrates, and 10,000 able men out of Jerusalem, leaving none |
| | XXIV, 1. | behind but the poorer sort of people; and out of the country round |
| | Ezekiel. | about he carried also away 8000 artificers. Among the captives |
| | XVII, 12. | are Mordecai, and Ezekiel the priest; Ezekiel, therefore, in his |
| | I, 2, 3. | prophecy reckons the time all along from the beginning of this |
| | Baruch. VI. | captivity. An epistle, said to be Jeremiah's, is now sent to the |
| | | captives, admonishing them to beware of the idolatry which they |
| | | shall see in Babylon. |
| | 2 Kings. | Nebuchadnezzar, before his departure from Jerusalem, makes |
| | XXIV, 17. | Mattaniah, Jehoiachin's father's brother, king, changing his name |
| | | into Zedekiah. |
| | 2 Chron. | Zedekiah, beginning his reign at 21 years of age, reigneth 11 |
| | XXXVI. | years; he, by rebelling against Nebuchadnezzar, or rather by |
| | | continuing in open rebellion (as his father had done) against God, |
| | | brought upon Jerusalem and the whole nation of the Jews those long- |
| | | deserved calamities which God had so often forewarned them of |
| 588 | | by his prophets; for, in the latter end of the 11th year of Zedekiah, |
| | 2 Kings. | Jerusalem, after a long siege, is taken by Nebuchadnezzar, and |
| | XXV. | his Chaldeans enter it. Zedekiah flees away by night, but, being |
| | Jer. I, 3. | pursued, is taken, and brought prisoner to Riblah, Nebuchadnez- |
| | XXXIX. | zar's headquarters; there having first seen his children slaugh- |
| | LII, | tered before his eyes, he has afterward those eyes put out, and, |
| | | being loaded with chains, is carried away captive to Babylon. |
| | | About a month after the taking of the city, Nebuzaradan, captain |
| | | of the guard, sent by Nebuchadnezzar, makes his entry into it, |
| | | sets fire to the temple, the king's palace, and some noblemen's |
| | | houses, and so layeth the whole city in ashes; the walls of Jeru- |
| | | salem being razed to the ground; all that were left in the city, |
| | | and those that a little before had fallen to the Chaldeans, with |
| | | what treasure he can find, doth Nebuzaradan carry with him into |
| | 26. | Babylon. |
| | | And thus was Judah carried out of her own land, 468 years after |
| | 2 Kings. | David began to reign over it, 388 years after the falling off of the |
| | XXV, 21. | ten tribes, and 134 years after the destruction of the kingdom of |
| | | Israel. |
| | Jer. | Obadiah, the prophet, denounceth God's judgments against the |
| | XLIX, 7. | Edomites, who now exult over the calamity of the Jews. The |
| | Ezekiel. | same do Jeremy and Ezekiel, and the author of the 79th and 137th |
| | XXV, 12. | Psalms, who wrote all about the same time. |

## THE SIXTH AGE OF THE WORLD.

Before Christ 569 — Daniel. IV, 29, 33 — The Babylonian Empire.

NEBUCHADNEZZAR, proud of his victories over Egypt, and his conquest of Judea and other countries, and boasting the magnificence of his buildings, falls distracted, and is driven from the society of men.

562 — 34.

After seven years spent among the beasts of the field, his understanding returning to him, he humbly acknowledgeth the power of God, and his goodness toward him, and is restored to his kingdom. A few days after, he dies, having reigned about 20 months together with his father, and 43 years by himself.

2 Kings. XXV, 27. Jer. LII, 31.

Evil-merodach, his son, succeeds him, in the 37th year of the captivity of Jehoiachin, or Jeconiah, who presently gives order for the enlargement of Jehoiachin, and two days after changeth his prison clothes, sets him above all the princes of his court, and causeth him to eat at his own table. Jehoiachin dies about two years after.

555 — Daniel. VII, 1.

Belshazzar, having removed some persons who had murdered his father, Evil-merodach, and usurped his throne, succeeds in the kingdom of Babylon. In the first year of this king's reign Daniel has the vision of the four beasts, signifying the four great monarchies of the world, and of God delivering over all power and sovereignty to the Son of Man.

553 — VIII, 1.

In the third year of Belshazzar, Daniel receives the vision of the ram and the he-goat, betokening the destruction of the Persian monarchy, and the great misery which Antiochus should bring upon the people of God.

538 — V. Jer. XXVII, 7. Dan. V. Isa. XIII. Hab. II. Jer. XXV, 12. L, LI. Dan. V, 31.

This year Belshazzar makes a great feast for all the nobles, and causeth to be brought forth all the vessels of the house of the Lord, which Nebuchadnezzar, his grandfather, had brought away from Jerusalem, to the glory of his idols, and dishonor of the true God. In the midst of all this jollity a hand appears writing on the wall of the room in which the king and his numerous guests sit drinking. The king, greatly terrified hereat, sends for his Chaldean astrologers and wizards, and commands them to read the writing, and give him the interpretation of it; but they not being able to do either, Daniel is sent for, who reads the writing, and gives the king the interpretation of it: whereupon Daniel is publicly proclaimed the third man in the kingdom. The same night Belshazzar is slain, Babylon is taken by Cyrus, and the empire translated to the Medes and Persians, as had been sundry times foretold by the prophets.

Cyrus having given the kingdom of Babylon to Darius the Mede, reserving some palaces in the city for himself, he returns through Media into Persia.

VI.

Daniel's greatness raising envy in some principal courtiers and officers, these contrive his ruin: but finding nothing in his management of affairs whereof to accuse him, they resolve to order matters so that Daniel's piety toward God shall become an offence worthy of death. They move the king to make a decree that for 30 days no petition shall be made to any god or man, but to himself only. Which decree Daniel breaks by making supplication to his God, and is, for so doing, cast into a den of lions; but being found to have received no hurt there, Darius commands the conspirators to be cast into the same den, who are presently devoured; and the king publisheth a decree that all persons throughout his dominions shall reverence and fear the God of Daniel.

537 — IX. Jer. XXIX, 10. Dan. IX.

Toward the end of the first year of the reign of Darius the Mede, to be reckoned from the subversion of the Babylonish empire, begins the 70th year of the captivity of the Jews, which, by Jeremiah's prophecy, was to be the last year of their calamity. Upon consideration of which time, so near at hand, Daniel pours out his most fervent prayers to God for the remission of his own sins, and those of his people, and for that promised deliverance out of their captivity; to whom the angel Gabriel brings an answer not only of this, but also of the spiritual deliverance of the church by the death of the Messiah; uttering that memorable prophecy of the seventy weeks.

536 — Cyrus, his father Cambyses, and his father-in-law Cyaxares,

| | | |
|---|---|---|
| Before Christ 536 The Persian Empire. | Ezra. I, 2. | both dying, Persia falls to him by inheritance, and Media by contract of marriage: and so he is possessed of the whole eastern empire; from which time both Xenophon (*Inst., lib.* 8) reckons the 7 years of his reign; and the Holy Scripture, out of the records of the Medes and Persians, reckons this his first year; for it teacheth us that in this year came forth that renowned edict of his, Thus saith Cyrus, king of Persia, The Lord God of Heaven hath given me all the kingdoms of the earth, and hath charged me to build him a house at Jerusalem which is in Judah, etc. At which time the 70 years of the Babylonish captivity being expired (as was foretold by Isaiah and Jeremiah, the former making mention of Cyrus by name), he gives leave to all the Jews, dwelling in all parts of his dominions, to return into their own country, and commands them immediately to fall in hand with rebuilding of the temple. |
| | Isaiah. XLIV, 28. XLV, 1, 13. | |
| | | He restoreth also all the vessels of the house of God, which Nebuchadnezzar had brought from thence; and contributes toward the building. |
| | Ezra I, 5, 6. II. Neh. VII. | The Jews, therefore, return into their own country, the poorer sort having allowance made them to defray their charges upon the way. The number of the children of the province, or Hebrews born in Chaldea, which, with their captain, Zerubbabel, and their high priest, Jeshua, return out of captivity, is 42,360, besides proselytes, men-servants, and maid-servants, to the number of 7337. Now the particular sums of Ezra's catalogue being cast up amount only to 29,818; and those in Nehemiah's account make but 31,031, both which come far short of that general sum of 42,360, which at the bottom of each catalogue is said to be the number of the whole congregation. Wherefore the Hebrews, in the xxixth chapter of their great chronicle, tell us, that to complete the full sum of 42,360, we must cast in those of the other ten tribes |
| | Acts. XXVI, 7. Lam. I, 1. Luke II, 36. 2 Chron. XI, 16. | of Israel who came up out of the captivity with the Jews. For even till the last extirpation of the Jewish State there remained some relics of the other ten tribes, not only in the dispersion, and at Jerusalem, and other cities of Judah, but also of those who kept still in their own seats; for Shalmaneser swept not away all out of the whole ten tribes, but left a remnant of them in their own country, who were afterward, together with the Jews, Benjamites and Levites, carried away by Nebuchadnezzar into Babylon, and are now dismissed and sent back again by Cyrus. |
| 535 | Ezra III, 8, 13. | In the second year after their return from Babylon, in the second month, they appoint Levites to oversee the work of the house of God, and lay the foundation of the temple; the old men lamenting, who 53 years before had seen the old temple standing, and the younger sort rejoicing to see the new one going up. |
| 534 | IV, 5, | The Samaritans, by the means of certain courtiers about Cyrus, whom they had bribed for that purpose, disturb the Jews in their work of the temple. |
| 529 | 6. | In the beginning of the reign of Artaxerxes (called in profane story Cambyses) the Samaritans, who, whilst Cyrus lived, had secretly undermined the Jews, now openly frame a direct accusation in writing, against the inhabitants of Judah and Jerusalem, and present it to the king, who presently forbids the Jews to proceed in the building. |
| 520 | V, 1. | In the second year of king Darius Hystaspes (the same with Ahasuerus), Zerubbabel and Jeshua, incited by the prophets Haggai and Zechariah, set forward the building of the temple. |
| | Hag. II, 1, 9. | Haggai prophesieth that the glory of this second temple shall be greater than that of the former; not as being a more magnificent structure, but in regard that the blessed Messiah shall one day honor it with his presence, and from thence propagate peace to all nations. |
| 519 | Zech. I, 1, 6. | About this time Zechariah the prophet exhorteth the Jews to repentance. |
| 518 | Esther. I, II. | Ahasuerus puts away queen Vashti, his wife, and not long after espouseth Esther, the niece of Mordecai the Jew. |
| 515 | Ezra. VI, 15–22. | In the sixth year of Darius, or Ahasuerus, the temple is finished, the dedication whereof is celebrated with great joy and abundance of sacrifices, the priests and Levites, every one in his place, attending on the ministry of the temple. The passover also is celebrated. |

| Before Christ | | |
|---|---|---|
| 510 | Esther. III. | Haman, an Agagite, of the race of the Amalekites, a great favorite of king Ahasuerus, offended at Mordecai, because he falls not down and adores him, as others do, resolves to be revenged of the whole nation of the Jews (which was ever averse to his), and |
| | Deut. XXV, 19. | to root it out; for the executing of which purpose, that he may find a successful time, he causeth Pur, that is, the lot, to be cast before him, for to know the day and month wherein the Jews shall be destroyed, and the lot falls on the 12th month, Adar. |
| | Esther. IV. | Haman obtains an edict from the king, that all Jews, without respect to sex or age, upon the thirteenth day of the month Adar, be put to death, in all the provinces of the king's dominions. Hereupon Mordecai, Esther, and all the Jews, humble themselves before the Lord by fasting and prayer. |
| | VI. | Ahasuerus, hearing it read in the chronicles that a conspiracy had been discovered to him by Mordecai, commandeth that he be publicly honored, and that by Haman himself, his deadly enemy. |
| | VII. | Esther, entertaining the king and Haman at a banquet, maketh suit for her own life, and her people's, and accuseth Haman. The king, understanding that Haman had provided a gallows for |
| 509 | IX. Ezra. | Mordecai, causeth him to be hanged thereon. In memory of this great deliverance the two days of Purim are made festival. |
| 467 | VII. | Ezra the priest, a man skilled in the law of Moses, obtains a large commission from king Artaxerxes to settle the Jewish commonwealth, and to reform the church at Jerusalem. |
| | VIII. | In the seventh year of Artaxerxes, Ezra, with a great multitude of Jews, sets out from Babylon. |
| 455 | IX, X. | Ezra obligeth those who had taken strangers to wife to send them back. |
| | Neh. II. | In the twentieth year of king Artaxerxes, Nehemiah, a Jew, one of his cup-bearers, being made governor of Judea, obtains leave to build the wall of Jerusalem, and finish that great work. |
| | Dan. IX, 24. | Here begins Daniel's 70 weeks, to be fulfilled before the passion of our Saviour. |
| 442 | Neh. V, 14. | Nehemiah, having governed Judea 12 years, returns to the king |
| 415 | XIII, 6. | of Persia. |
| | | This year is the 21st Jubilee, the last that ever the prophets of the Old Testament saw; for that place in Nehemiah, chap. xii, 22, is not to be understood of the last Darius, but of Darius Nothus, who now reigns in Persia; the full history of Nehemiah ending with the time of Artaxerxes Longimanus, father of this Darius Nothus. |
| | | Hitherto (saith Eusebius, in his chronicle, to the 32d year of Artaxerxes) the Divine Scriptures of the Hebrews contain the annals of the times; but those things which were done among them afterward we must deliver out of the books of the Maccabees, and out of the writings of Josephus, who have delivered a general history of the Jewish affairs from thence down to the times of the Romans. |
| | | That Malachi, the last of the prophets, was contemporary with Nehemiah, appears from hence, that he nowhere exhorts the |
| | XIII. | people to the building of the temple, as Haggai and Zachary did; but the temple being now built, he reproves those disorders which Nehemiah, at his second return with a new commission from Babylon, saith he found in his absence to have crept in among the |
| | Malachi. IV, 4. Luke I, 17. Matthew. XI, 14. XVII, 12. | Jews, as marriage with strange women, withholding of tithes, and abuses in the worship of God; and because a succession of prophets was not to be expected, as before, he exhorteth the people constantly to adhere to the law of Moses, till Christ, the chief prophet, should appear, whose forerunner, John the Baptist, should come in the spirit and power of Elias, to turn the hearts of the fathers unto their children, and the disobedient to the wisdom of the just. See 1 *Mac.* iv, 46, and ix, 27. |
| 335 | Jos. Ant. I. 11, c. 8. | ALEXANDER the Great, king of Macedonia, passeth out of Europe into Asia, and begins to lay waste the Persian empire. |
| 332 | Id. ibid. | Manasses, brother to Jaddus the high priest, refusing to put away his strange wife, is driven from the sacrifice: Sanaballath, his father-in-law, governor of Samaria, revolteth from Darius, obtains leave of Alexander to build a temple on mount Gerizim, |

| Before Christ | | |
|---|---|---|
| 332 | Jos. Ant. | and makes Manasses high priest thereof, to which resort all such as are entangled in unlawful marriage, with all such offenders as think themselves not safe at Jerusalem. This was the rise of that schismatical conventicle of the Samaritans. See *John* iv, 20. |
| | l. 11, c. 8. | Alexander marcheth toward Jerusalem, intending to besiege it. Jaddus the high priest, hearing of it, putteth on his priestly ornaments, and, accompanied with the people all in white, goeth out to meet him. Alexander, seeing his habit, falls prostrate before him, saying that, whilst he was in Macedonia, a man appeared unto him in the very same habit, who invited him to come into Asia, and promised to deliver the Persian empire into his hands. After this he goes to the temple, and offers sacrifice, according to the |
| | Daniel. VIII, 7. XI, 13. | high priest's direction. They show him the prophecy of Daniel, that a Grecian should come and destroy the Persians, whereby he is mightily confirmed in his persuasion that he himself is the man. Lastly, he bestoweth on the Jews whatever favors they desire, and departeth. |
| 330 | The Macedonian Empire. | The Persians are overcome, Darius slain, and Alexander remains universal monarch of the eastern world. |
| | Jos. Ant. l, 12, c. 1. 1 Mac. I. | Alexander, having reigned six years and ten months, dieth; his army and dominions are divided among his captains. Antigonus makes himself governor of Asia, Seleucus of Babylon and the bordering nations; Lysimachus hath the Hellespont; Cassander, |
| 323 | | Macedon; and Ptolemeus, the son of Lagus, gets Egypt. |
| 320 | Jos. Ant. l. 12, c. 1. | Ptolemeus, surnamed Soter, makes himself master of Jerusalem by a stratagem, for he enters the city on a Sabbath-day, under pretence of offering sacrifice, and whilst the Jews suspect nothing, but spend the day in ease and idleness, he surpriseth the city, without resistance, and maketh the citizens captives. He sendeth several colonies of Jews into Egypt, and puts great confidence in them. |
| 277 | l. 12, c. 2. | Ptolemeus Philadelphus, son of Ptolemeus Soter, being a great favorer of learning, builds a most magnificent library at Alexandria. Demetrius Phalerius, to whom he had committed the care of procuring all sorts of books, and out of all countries, persuades him to employ 72 Jews in translating the Holy Scriptures out of the original Hebrew into the Greek tongue, which was done, in the seventh year of his reign. The king also dismisseth many captive Jews, and dedicates many presents to the temple of God at Jerusalem. |
| 177 | 2 Mac. III. | One Simon, a man of the tribe of Benjamin, governor of the temple, falling out with Onias the high priest, goes to Apollonius, the governor of Celosyria, and informs him that there is a vast treasure in the temple; Apollonius acquaints king Seleucus, his master, with it, who presently sends his treasurer, Heliodorus, to Jerusalem, to bring this money away. Heliodorus, entering the temple, is by angels struck down in the very place, and carried from thence half dead; but by the prayers of Onias he is soon after restored to his health. Returning to Seleucus that sent him, he magnifies the holiness of the temple, and the power of God dwelling in it. |
| 176 | 1 Mac. I, 10. | Antiochus Epiphanes succeeds Seleucus in the kingdom of Syria, and reigneth 11 years and some months. |
| 175 | 2 Mac. IV, 7, | Jason, by corrupting king Antiochus, obtaineth the office of high priest. |
| 172 | 23, 24, | Menelaus, brother to Simon the traitor, being employed by Jason to carry the money to the king, promiseth 300 talents of silver above what Jason had sent, and getteth the priesthood to himself. |
| 170 | 27. | Menelaus, not paying the money he had promised the king at his admission, is summoned to appear before Antiochus; he substituteth Lysimachus, his brother, in his place. |
| | 1 Mac. I, 21, 22. | Antiochus taketh Jerusalem, and sacking it, pillageth the temple, destroyeth 40,000 of the inhabitants, and selleth as many |
| | 2 Mac. V. | more. He endeavoreth also to abolish the worship of God, and |
| | Jos. Ant. l. 12, c. 7. | forceth many Jews to forsake their religion. The Samaritans now disown their relation to the Jews, to whom in prosperity they pre- |
| | Daniel. XI, 28. | tended alliance, and consecrate the temple on mount Gerizim to Jupiter. |

| Before Christ | | |
|---|---|---|
| 168 | 1 Mac. VIII, 5. | Perseus, having made war upon the Romans, is this year overcome by them, and the kingdom of the Macedonians ends, when, from Caranus, it had stood 626 years. Nevertheless, the relics of the Macedonian empire, while that of the Roman was rising, did yet survive in the Ptolemies of Egypt and the kings of Syria. |
| 167 | I, 45. | King Antiochus, by a public edict, commands all nations that are subject unto him to observe the same way of divine worship, and, laying aside their peculiar customs, to profess the same religion with the Grecians, the punishment of death being threatened unto such as shall be disobedient; and he appoints overseers over every people and nation, who shall compel them hereunto. Of the Jews many choose rather to undergo the most cruel torments than to offer sacrifice unto idols; all which martyrdoms, with those glorious sufferings of the seven Maccabean brethren, are recorded in the two books of Maccabees. |
| | 1 Mac. II. 2 Mac. VI. Jos. Ant. l. 12, c. 8. | Mattathias, a priest, with his five sons, slay those that are sent by king Antiochus to compel them to offer abominable sacrifices, and after betake themselves to the desert. They are followed by many others, of whom a great number are stifled in their caves, because they would not defend themselves on the Sabbath-day. Mattathias abolisheth that superstition, and exhorts his sons to assert their privileges, and deliver their country from bondage |
| 166 | 1 Mac. III. 2 Mac. VIII. Jos. Ant. l. 12, c. 9. | Mattathias dies, and Judas Maccabeus takes upon him the management of this affair. He delivers his country, and purgeth it from the abominations which had been committed in it. |
| | 1 Mac. III. Jos. Ant. l. 12, c. 10. | Apollonius, governor of Samaria, having raised an army among the Gentiles and Samaritans, falls upon the Jews, but is discomfited and slain by Judas Maccabeus. |
| | 1 Mac. III, 13. Joseph. | Seron also, governor of the lower Syria, musters up all the forces under his command, and invades Judea; him Judas Maccabeus encounters, slays 800 of his men on the place, and puts the rest to flight. |
| 165 | ut supra. 1 Mac. III, 27. Jos. Ant. l. 12, c. 11. | Judas Maccabeus defeats a great army which Antiochus sent against the Jews. Lysias returns with a great power; Judas kills 5000 of his men, and causeth him to retreat. He purifieth the temple, and setteth it in order, after it had lain desolate three years, and buildeth a wall about Zion. |
| 164 | 1 Mac. VI. 2 Mac. IX, 9. Jos. Ant. l. 12, c. 13. | Antiochus is taken with a violent pain in his bowels, and such a rottenness seizeth his flesh that worms breed in it; he confesseth that he is plagued for the wrong done to Jerusalem, and dieth, in the 149th year of the kingdom of the Grecians. His son, Antiochus Eupator, a child about nine years old, succeeds him. He maketh |
| 163 | 2 Mac. XIII. Jos. Ant. l. 12, c. 15. | peace with the Jews, but quickly breaketh it; he puts to death Menelaus the high priest, and confers that honor upon Alcimus, or Jacimus. Onias, the son of Onias III, retires into Egypt, where Ptolemeus Philometor, and Cleopatra his wife, permit him to build a temple at Heliopolis in imitation of that at Jerusalem, and they constitute him high priest there. |
| 162 | 1 Mac. VII. | Demetrius Soter, the son of Seleucus, escapes from Rome, and comes into Syria, where he causeth himself to be crowned king, and putteth to death Antiochus and Lysias. |
| 161 | 2 Mac. XIV. Jos. Ant. l. 12, c. 17. | Demetrius, at the instance of Alcimus, sends Nicanor with a great army against Judas Maccabeus, whom he endeavors to surprise. They join battle, and Nicanor is slain. |
| | | Here ends the continued history of the second book of Maccabees, being an abstract and breviary of the five books of Jason, a Jew of Cyrene. |
| | 1 Mac. IX. Jos. Ant. l. 12, c. 18, 19. | King Demetrius sends Bacchides with a new army, consisting of 20,000 men, against Judas Maccabeus; Judas, having with him but 800 men, ventures to engage him, and is slain. His brother Jonathan is chosen general in his stead. |
| | 1 Mac. VIII, 19. Jos. Ant. | Jonathan enters into an alliance with the Romans. Josephus observes, that this was the first league that ever was known to be between the Jews and the Romans. |
| 160 | l. 18, c. 17. 1 Mac. IX, 55, 70. | Whilst Alcimus commands the wall of the inner court of the temple to be pulled down, God strikes him suddenly with a palsy, so that without speaking a word he dies in great torment. |

| Before Christ | | |
|---|---|---|
| 158 | Jos. Ant. l. 13, c. 2. 1 Mac. X, 1. | Jonathan, having wearied Bacchides by war, compelleth him to make a league and draw off his army. |
| 153 | Jos. Ant. l. 13, c. 3. | Alexander Balas, the son of king Antiochus Epiphanes, enters with an army into Syria: the garrison of Ptolemais set open their gates to him, by reason of their hatred to king Demetrius, who prepares himself for war. |
| | 1 Mac. X, 3, 10. Jos. Ant. l. 13, c. 4. | Demetrius desireth an alliance with Jonathan, who makes use of this occasion to repair the fortifications of Jerusalem. Alexander Balas is no less careful to obtain the friendship of Jonathan, and, to oblige him, confers on him the high priesthood. |
| 152 | 1 Mac. X, 15. Jos. Ant. l. 13, c. 5. 1 Mac. X, 21. | Jonathan puts on the holy vestment on the seventh month of the 160th year of the kingdom of the Grecians, at the feast of tabernacles. He was the first high priest of the Asmonean family. |
| 150 | Id. ibid. 1 Mac. X, 49, 50. Joseph. ubi supra. 1 Mac. X, 51. | Demetrius and Alexander come to battle, and Demetrius is slain. Alexander Balas, finding himself in the peaceable possession of the kingdom of Syria, espouseth Cleopatra, the daughter of Ptolemeus Philometor, king of Egypt. Alexander highly honors Jonathan the high priest at his nuptials. |
| 148 | Jos. l. 13, c. 7. 1 Mac. X, 75. Jos. Ant. l. 13, c. 8. 1 Mac. XI. | Demetrius Nicanor, eldest son of Demetrius Soter, enters into Cilicia with an army. King Alexander Balas gives the command of Syria to Apollonius, who sets upon Jonathan the high priest; Jonathan defeats him, and takes Joppe and Azotus, and burns the temple of Dagon. |
| 146 | Jos. loc. citat. | Ptolemeus Philometor, king of Egypt, comes to the relief of king Alexander, his son-in-law; Alexander ungratefully sets Ammonius to lie in ambush to kill him. The treachery being discovered, Ptolemeus takes away his daughter from Alexander, and marrieth her to Demetrius. Alexander having been driven from Antioch, the inhabitants of that place make offer of the kingdom to Ptolemeus; but he refuseth it, and persuadeth them to accept of Demetrius for their king. |
| 145 | | Alexander returns with a great army. Ptolemeus and Demetrius unite their forces, and overcome him in a pitched battle; but Ptolemeus dies of the wounds which he received, after he had seen the head of Alexander, sent to him by Zabdiel, an Arabian prince. Jonathan besiegeth the citadel at Jerusalem, held by a garrison of Macedonians. Complaint hereof being made to Demetrius, Jonathan appeaseth him by presents, and obtaineth new favors for the Jews. Demetrius incurreth the hatred of his soldiers by abridging their pay in time of peace. |
| | 1 Mac. XI, 54. Jos. Ant. | Tryphon, with some soldiers that revolted from Demetrius, undertakes to establish Antiochus, the son of Alexander Balas, in the kingdom of Syria. |
| 144 | l. 13, c. 9. 1. Mac. XI, 55. XII. | Demetrius is vanquished by young Antiochus, and made to fly into Seleucia. Great honors are by Antiochus conferred on Jonathan, who assists him against Demetrius. Jonathan renews his alliance with the Romans and Lacedemonians, and fortifies Jerusalem. |
| 143 | Jos. Ant. l. 13, c. 9, c. 10. | Tryphon contrives how he may quit himself of Antiochus, and reign in his stead; but fearing Jonathan's opposition, he invites him to come to Ptolemais, and bring with him some few of his soldiers, promising to deliver that city into his hands. Jonathan, suspecting no treachery, comes only with 1000 men to Tryphon at Ptolemais; but as soon as he is entered the city, Tryphon commands the gates to be shut. Jonathan is taken prisoner, and all his men put to the sword. |
| | 1 Mac. XIII. Jos. Ant. lib. 13, c. 10, 11. | The Jews hereupon make choice of Simon Maccabeus for their general, in the place of his brother Jonathan. Tryphon leads an army against Simon. He promiseth for 100 talents of silver to release Jonathan; the money being paid him, he breaks his promise, and puts Jonathan to death. Simon erects a stately monument for his father and his brethren. |
| | 1 Mac. XIII, 31, 32. Jos. Ant. l. 13, c. 12. | Tryphon murders the young king Antiochus, and puts the crown on his own head. The Romans and Lacedemonians renew their leagues with Simon, and write them in tables of brass. |
| 142 | | Simon has the government and high priesthood settled on him |

| Before Christ | | |
|---|---|---|
| 142 | 1 Mac. XIV, 18. Jos. Ant. l. 13, c. 13. | and his heirs; the Jews are by his means discharged from all manner of tribute to any foreign prince. He takes Sion, the fortress of Jerusalem, drives out of the city all idolaters, clears the houses of their idols, and placeth in the city such as are true worshipers of God. |
| 139 | l. 13, c. 12. | Tryphon's vices render him so odious to his soldiers, that they submit themselves to Cleopatra, Demetrius' relict. She marrieth Antiochus Soter, Demetrius' brother, and causeth him to be crowned king. Antiochus drives Tryphon out of Syria, and be- |
| 138 | | siegeth him in Dora, whence he flies to Apamea, where he is taken and slain. |
| 135 | 1 Mac. XVI. Jos. Ant. l. 13, c. 14. | Simon the high priest, traversing the cities of Judea, and taking care for their orderly government, comes down with his two sons, Mattathias and Judas, to Jericho; Ptolemeus, the son of Abubus, Simon's son-in-law, invites them to the castle which he had fortified, called Dochus, and there, whilst he entertains them at a banquet, barbarously murders them. John Hircanus succeeds his father in the high priesthood. |
| | | *Here ends the first book of Maccabees, containing the history of forty years.* |
| 130 | l. 13, c. 17. | John Hircanus takes Shechem, and demolisheth the temple on mount Gerizim, 200 years after it had been built by Sanaballat. |
| 107 | Jos. I, 1. Bell. c. 3. Ant. lib. 13, c. 19 and lib. 20, c. 8. | Judas, eldest son of Hircanus, otherwise called Aristobulus, and surnamed Philellen, succeeds his father in the government and the high priesthood. He was the first of any that, after the return from the captivity of Babylon, set a crown upon his head, and changed the State into a monarchy. |
| 88 | Luke II, 37. | Anna, the prophetess, daughter of Phanuel, of the tribe of Aser, this year becoming a widow, departs not from the temple, but serveth God with fasting and prayer night and day, for 84 years together, until such time as she sees Christ in the temple. |
| 63 | Jos. l. 1. Bell. c. 5. Ant. lib. 14, c. 8. | Jerusalem in this year is taken by Pompey, who meddles not with any of the treasure which was in the temple, but makes the Jews tributary to the Romans. |
| 49 The Rom. Emp. | | *Here begins the empire of the Roman Cæsars, when Julius Cæsar, having overthrown Pompey at the battle of Pharsalia, was made perpetual dictator.* |
| | Jos. l. 14, c. 25. | Herod, the son of Antipas, or Antipater, an Idumean, is this year by the Romans declared king of Judea. |
| 40 | Id. Ibid. c. 28, l. 1. | Herod, assisted by Sosius, the Roman general, lays siege to Jerusalem, and takes it: the soldiers fill all corners of the city |
| 38 | Bell. c. 13. | with blood, rapine and cruelty. Antigonus, the prince and high priest, is by Sosius carried away prisoner to Rome, and Herod |
| 37 | | put in full possession of the kingdom. |
| 31 | | About this time Hillel, a Babylonian, descended from David, flourished at Jerusalem; one of whose disciples was Jonathan, the son of Uzziel, the famous author of the Chaldee paraphrase. |
| 28 | Dionys. lib. 52. Jos. Ant. | Cæsar Octavianus, nephew to Julius Cæsar, in his fifth consulship, with the assent of the senate and people of Rome, assumes |
| 27 | lib. 20. | the title of emperor; at which time the government among the Romans was legally changed from a republic into a monarchy. |
| 18 | John II, 20. | The next year following he is by the senate surnamed Augustus. Herod this year begins to enlarge, or rather to rebuild, the temple at Jerusalem, 46 years before the first passover of the ministry of Christ, and in nine years and a half finisheth that magnificent structure. |
| 5 | Luke I, 11, | The angel Gabriel appears to Zachary the priest, as he is offering incense in the temple, telling him that a son shall be born unto him, whom he shall call John; who also shall be a Nazarite, and the forerunner of the Lord in the spirit and power of Elias. |
| 5 | 26, | In the sixth month after John was conceived, the same angel Gabriel is sent by God to Nazareth in Galilee, to the most blessed Virgin Mary (espoused to Joseph, a person of the house and lineage of David); the angel declares unto her that she shall conceive by the overshadowing of the Holy Ghost, and bring forth a son, and call his name JESUS. |
| 4 | 57. | John the Baptist born, six months before Christ. |

## THE SEVENTH AGE OF THE WORLD.

| Before Christ | | |
|---|---|---|
| | Luke II, 6, | CHRIST, our Lord and Saviour, in the fullness of time, is born of the blessed Virgin Mary, at Bethlehem, and laid in a manger. |
| | 21. | On the eighth day after his nativity he is circumcised, and named |
| | Matthew. II, | JESUS. |
| | 1, 12, | The wise men of the east bring presents to the new-born king of the Jews. |
| | 14, | Joseph flees into Egypt with the child Jesus, and Mary his mother. |
| | 16. | Herod commands the infants in and about Bethlehem to be slain. |
| 3 | Jos. Ant. l. 17, c. 17. | Herod dieth, and his son Archelaus is by Cæsar made tetrarch of Judea; other dominions which belonged to Herod are divided among his sons. |
| | Matt. II, 19–23. | Christ, by God's appointment, is brought back out of Egypt into Nazareth. |
| | | *The first year of the vulgar Christian Era begins here.* |
| After Christ | Luke II, 46. | By occasion of the passover our Lord goes up with his parents to Jerusalem, and there disputes with the doctors in the temple. |
| 8 | | Augustus dies, and Tiberius succeeds him. |
| 14 | | Josephus, called Caiaphas, is made high priest of the Jews by the favor of Valerius Gratus, the Roman governor. |
| 26 | Jos. Ant. l. 18, c. 3. | Toward the end of this year Pontius Pilate is sent to be procurator of Judea, in the place of Valerius Gratus. |
| 27 | Matt. III, 1. | John the Baptist begins to preach and to baptize in the desert of |
| | Mark I, 2. | Judea, thereby preparing the way of the Lord, and doing his en- |
| | Luke III, 3. | deavor that Christ, coming after him, may be made known unto |
| | John I, 7. | Israel. Unto John God gives a sign whereby he may know the |
| | Isa. LXI, 1. | Lord's Christ, that upon whom he shall see the Spirit descending and remaining on him, the same is he which shall baptize with the Holy Ghost. |
| | Matt. III, 13. | Jesus, entering upon the thirtieth year of his age, comes from |
| | Mark I, 10. | Galilee to Jordan, and is baptized of John, at which time a most |
| | Luke III, 22. | illustrious manifestation is made of the blessed Trinity; for the Son of God ascending out of the water, and praying, the heavens are opened, and the Spirit of God in the shape of a dove descends upon him; and the voice of the Father is heard from heaven, saying, This is my beloved Son, in whom I am well pleased. |
| | John I, 34. | John sees it, and bears record that this is the Son of God. |
| 30 | Matt. IV, 1. | Jesus, full of the Holy Ghost, returns from Jordan, and is led by |
| | Mark I, 12. | the Spirit into the wilderness, where he fasteth forty days and forty |
| | Luke IV, 1, 14. | nights, and is tempted by the devil. |
| | | After this our Lord returns into Galilee. |
| | John. I, 35, 47. | John gives testimony to our Saviour passing by him; Andrew, Peter, Philip, and Nathanael acknowledge him to be the Messias, and become his disciples. |
| | II, 1. | Christ, at a marriage in Cana of Galilee, turneth water into wine; this was his first miracle. |
| | | *The first passover of Christ's public ministry, from which the first year of the seventieth and last of Daniel's weeks begins:* In which the covenant is confirmed with many, Dan. ix, 27, *compared with* Matt. xxvi, 28. |
| | John. II, 13–19. | JESUS cometh to Jerusalem at the time of the passover, and entering into the temple, scourgeth out those that bought and sold there. The Jews require a sign of his authority: Christ bids them destroy that temple (understanding the temple of his body), and in three days he will raise it up. |
| | Matt. XIV, 3. | Herod, the tetrarch, casteth John the Baptist into prison for re- |
| | Mark VI, 17. | prehending his incest with his brother Philip's wife, and other |
| | Luke III, 19. | evils done by him. |
| 31 | John IV, 7, 42. | Christ discovers himself to the woman of Samaria. |
| | Luke IV, 43. | He goes throughout all Galilee, teaching in the synagogues, and working miracles |
| | V, 27. | Matthew called to be a disciple. |

After Christ | John.

31 | *The second passover of Christ's ministry*, John v, 1, *compared with* iv, 3, 5, *from which the second year of the seventieth week of Daniel begins.*

V, 1, | JESUS comes up to Jerusalem at the time of the feast, and heals on the Sabbath-day a man that had an infirmity 38 years, lying at the pool of Bethesda. He makes a most divine apology to the

19. | Jews that sought to kill him, because he said that God was his father.

Matt. X, 1. Mark III, 14. Luke VI, 13. Matt. V, VI, VII. Luke VI, 20. Mark VI, 7. Matt. X, 1. | Christ out of the multitude of his disciples chooseth 12, whom he calleth Apostles: namely, Peter, Andrew, James, John, Philip, Bartholomew, Matthew, Thomas, James the son of Alpheus, Simon called Zelotes, Judas the brother of James, and Judas Iscariot. To these our Saviour chiefly directs his discourse in that glorious, full, and admirable sermon on the mount.

Jesus sends his 12 apostles by two and two, to preach, and heal the sick.

32 Matt. XIV, 10. Luke IX, 12. John VI, 1–15. | John the Baptist is beheaded in prison by Herod's command.

Jesus feeds 5000 men, besides women and children, with five barley loaves and two little fishes. He refuses to be made a king.

---

*The third passover of Christ's ministry*, John vi, 4, *from which the third year of the seventieth week of Daniel begins.*

Matt. XVII, 1. Mark IX, 2. Luke IX, 28. Matthew. XVII, 24. Luke. IX, 54. | JESUS is transfigured on the mount; Moses and Elias are seen to talk with him; and a voice from heaven is heard a second time, saying, This is my beloved Son; hear him.

Christ payeth tribute to Cæsar.

A certain village of the Samaritans refuseth our Saviour entertainment in his way to Jerusalem: the disciples, desiring to call for fire from heaven to consume them, are severely reprehended.

X, 1. | The seventy disciples are sent out by two and two to work miracles, and to preach.

XI, 1. | Christ teacheth his disciples to pray.

33 John XI, 1, 49. | Christ raiseth Lazarus, that had been buried four days.

Caiaphas, high priest of the Jews, prophesieth concerning the death of Christ.

Luke XIX, 1. Mark X, 46. John XII, 3. | Zaccheus, a publican, converted.

Christ restoreth to blind Bartimeus his sight.

Mary, the sister of Lazarus, anoints our Saviour's feet with costly spikenard, and wipeth them with the hair of her head.

Matt. XXI. Mark XI. Luke XIX. John XII. Zech. IX, 9. | Christ rideth in triumph into Jerusalem: the multitude spread their garments in the way, and cry, Hosanna to the Son of David. Coming near the city, he weeps over it, and foretells its destruction. He enters the temple, and casteth out those that bought and sold there, and heals the blind and lame.

Matt. XXI, 19. | He curseth the fruitless fig-tree, and the next morning it is found dried up and withered. Thence he takes occasion to show the power of faith.

---

*The fourth passover, in which Christ our passover was sacrificed,* 1 Cor. v, 7, *and so an end is put to all legal sacrifices prefiguring this great expiation. The fourth or middle year of Daniel's last week begins*, Dan. ix, 27.

XXVI Mark XIV. Luke XXII. | ON the first day of unleavened bread, when the passover of the Jews was to be slain (*April* 2), in the evening, Jesus eateth the passover with his disciples, and institutes the sacrament of his body and blood in bread and wine.

John XIII–XVII. | Christ washeth his disciples' feet, and exhorteth them to humility and charity.

Matt. XXVI. | In the self-same night Christ is betrayed by Judas, mocked, buffeted, and spit upon by the soldiers.

Mark XV. Luke XXIII. John XIX. Ps. XXII. Matthew. XXVIII. Mark XVI. | Next day he is condemned by Pilate, and crucified; the sun during the crucifixion is darkened, and the vail of the temple rent in the midst. Christ, praying for his enemies, gives up the ghost. Joseph of Arimathea begs the body, and lays it in a new sepulchre.

On the third day, the next after the Jewish Sabbath (*April* 5), Christ riseth from the dead; his resurrection is declared by angels to the women that came to the sepulchre. Christ first appeareth to Mary Magdalene, and afterward to his disciples, and dineth with them.

| After Christ | | |
|---|---|---|
| 33 | Luke. XXIV. | Christ bringeth his apostles to mount Olivet; commandeth them |
| | John XX. | to expect in Jerusalem the sending down of the Holy Ghost; |
| | Acts I. | sends them to teach and baptize all nations, and blesses them; and |
| | Matt. XXVIII. | while they behold, he is taken up, and a cloud receives him out of their sight. After his ascension the disciples are warned by two angels to depart, and to set their minds upon his second coming; they accordingly return, and, giving themselves to prayer, choose Matthias to be an apostle in the place of Judas. |
| | Acts. II. | On the day of Pentecost (*May* 24), the Holy Ghost descendeth on the apostles in the form of cloven tongues, like as of fire, and enableth them to speak all languages. Peter the same day preacheth Christ and the resurrection, and about 3000 believers are added to the church. |
| | III. | Peter, by faith in Christ's name, healeth a lame man. |
| | IV. | The rulers of the Jews, offended at Peter's sermon, and his miraculous cure of the lame man, cast both him and John into prison; upon their examination they boldly avouch the lame man to be healed by the name of Jesus, and that by the same Jesus we must be eternally saved. After this the Jews forbid them to speak any more in that name; but the apostles answer, That it is fit they should obey God rather than men. They are threatened and let go. |
| | V, 1–10, | Ananias and his wife Sapphira, for their hypocrisy, are suddenly struck dead. |
| | 17–42. | The apostles are again cast into prison by the high priest; but an angel sets them at liberty, and bids them preach the gospel to the people without fear: being taken again teaching in the temple, they are brought before the council, where, by the advice of Gamaliel, a Pharisee, and doctor of the law, they are delivered. |
| 34 | VI. | The number of believers increasing at Jerusalem, the apostles ordain seven deacons, who should distribute the alms of the whole church to the widows and poorer sort of believers. Stephen, one of these deacons, having confounded some that disputed with him, is by them falsely accused of blasphemy, and brought before the |
| | VII. | council, where he reprehends their rebellion, and murdering of Christ. Whereupon they cast him out of the city, and stone him; he in the meantime praying for them. |
| | VIII, | A great persecution of the Church at Jerusalem follows after the death of the first martyr, Stephen. |
| | 5, | Philip, one of the seven deacons, preacheth at Samaria, and converteth many; worketh miracles, and healeth the sick. Simon the sorcerer, seeing the wonders that are done by Philip, believeth, and is baptized. |
| | 14, | The apostles at Jerusalem, hearing that Samaria had received the faith, send thither Peter and John to confirm and enlarge the Church. The apostles by prayer and imposition of hands confer the Holy Ghost on all believers. Simon Magus offers them money, that he may receive the power of conferring the same, whose impiety is sharply reproved by Peter. Having completed their ministry in those parts, they return to Jerusalem. |
| 35 | 26. | An angel sendeth Philip to teach and baptize the Ethiopian eunuch. |
| | IX, 1, | Saul, a violent persecutor of all that call on the name of Jesus, and one who consented to the death of Stephen, goes now toward Damascus, with commission from the high priest and the council to apprehend all Christians in those parts, and to bring them bound to Jerusalem; on the way he is miraculously converted by a voice from heaven, and three days after baptized by Ananias at Damascus, where he preacheth the gospel of Christ with great boldness, to the astonishment of those that knew upon what design he was sent thither. |
| 38 | 23. | Saul having preached the gospel at Damascus a long time, the |
| | 2 Cor. XI, 32. | Jews lay wait to kill him, but he escapeth from thence, and comes |
| | Gal. I, 18. | to Jerusalem; there he sees Peter, and James, the brother of our Lord, and abides with them fifteen days. Here he speaks boldly in the name of Jesus, and disputes with the Grecians, or rather Jews that used the Greek tongue. These also consult how they may kill him. |
| | Acts XXII, 17, | While Saul prays in the temple, he is in a trance, and the Lord |

| After Christ | | |
|---|---|---|
| 38 | Acts. XXII, 17. | appears unto him, and bids him to depart from Jerusalem, because they will not receive his testimony; adding, that he will send him to the Gentiles. |
| | IX, 30. Gal. I, 21. | Saul, leaving Jerusalem, goes to his own country, Tarsus, and from thence travels into Syria and Cilicia. |
| | Acts. IX, 32, 36. | Peter visits the churches of Judea, Galilee, Samaria, etc. At Lydda he cureth Eneas of the palsy, and at Joppa restoreth Tabitha to life. |
| 41 | X. | At Cesarea, Cornelius, a centurion, by prayers and alms finds favor in the sight of God, and is commanded by an angel to send for Peter, now at Joppa. God by a vision teacheth Peter not to despise the Gentiles. Peter, being sent for by Cornelius, goes and preacheth Christ to him and a great company that were met at his house: while Peter preacheth the Holy Ghost falls upon them all, and immediately the apostle baptizeth them. |
| | XI. | Peter, at his return to Jerusalem, is accused by those of the circumcision for conversing with the Gentiles; but he declares to them his vision, and the whole matter concerning Cornelius, and they glorify God for granting to the Gentiles also repentance unto life. |
| | | The believers, who ever since the martyrdom of Stephen, and the persecution thereupon ensuing, had been dispersed throughout all Phenice and Cyprus, come now to Antioch, and preach the gospel to the Greeks there, having before preached to none but the Jews. The church at Jerusalem, understanding this, and that the number of believers increased exceedingly, sends Barnabas thither to confirm them; he goes to Tarsus, and takes Saul along with him to Antioch, where they continue a whole year, converting multitudes to the faith. Here the disciples were first called Christians. |
| 44 | XII. | About this time James, the brother of John, is beheaded by the command of Herod Agrippa. He also imprisoneth Peter, whom an angel delivers upon the prayers of the church. This same Herod, not long after, speaking to the people at Cesarea, some of them cry out, It is the voice of God, and not of man: and immediately an angel of the Lord smites him, because he gave not the glory to God, and he is eaten of worms, and dieth. |
| 45 | XIII. | Barnabas and Saul set forward in their preaching of the gospel. They plant the Christian faith in Seleucia, Cyprus, and other places. At Paphos they preach the gospel to Sergius Paulus, governor of that country: Elymas, a sorcerer, withstanding them, and endeavoring to turn away Sergius from the faith, is at Saul's rebuke struck blind. From this time Saul is always called by his new name, Paul; he preacheth at Antioch; the Gentiles believe, but the Jews gainsay and blaspheme. Whereupon he and his assistants turn to the Gentiles, and come to Iconium. |
| 46 | XIV. | At Iconium they are persecuted and ready to be stoned. From hence they fly to Lystra and Derbe, cities of Lycaonia. At Lystra, Paul healing a cripple, the multitude cry out that the gods are come down, and call Barnabas Jupiter, and Paul Mercurius, and would have sacrificed to them, had not the apostles, with clothes rent, run in among them, and assured them that they were men like themselves. Soon after there come Jews from Antioch and Iconium, who excite the people against them. Paul is by the furious multitude stoned, and drawn out of the city as dead; but whilst the disciples stand about him, he riseth up, and the next day departs with Barnabas to Derbe. |
| | 2 Cor. XI, 25. | |
| | XII, 2. | In this year, perhaps at this very time, Paul was caught up into the third heaven, and heard unspeakable words, fourteen years before he wrote his second epistle to the Corinthians. |
| | 2 Tim. I, 2, 5. | About this time Timothy, though a child, with his mother Eunice, and his grandmother Lois, embrace the Christian faith preached by Paul. |
| 52 | Acts. XV. | Certain Judaizing Christians come from Judea to Antioch, and teach that the Gentiles ought to be circumcised, and observe the law of Moses; these Paul and Barnabas oppose, and a council is held by the apostles and others at Jerusalem to determine this controversy. The decrees of the synod are sent to the churches. |

| After Christ | Acts. | |
|---|---|---|
| 53 | XV, 39. | Paul and Barnabas, thinking to visit the churches together, fall at strife, and part asunder: Barnabas and Mark go into Cyprus, Paul and Silas into Syria and Cilicia. |
| | XVI. | Paul coming to Derbe, finds there Timothy, whom (because his mother was a believing Jew, though his father a Gentile) he causeth to be circumcised, and takes him along with him. He is by a vision admonished to go into Macedonia: coming to Philippi, the chief city of that part of Macedonia, he converts Lydia; casteth out of a certain maid-servant a spirit of divination, whose master, losing a considerable gain thereby, brings Paul and Silas before the magistrates: these cause them to be whipped and imprisoned; but at midnight, Paul and Silas praying and singing psalms, the doors of the prison fly open, and their bonds are loosed: the jailer, ready to kill himself, is converted to the faith, and baptized the same night, with his whole family. Next day the magistrates come themselves, and pray them to depart the city. |
| 54 | XVII. | From Philippi Paul takes his journey through Amphipolis and Apollonia, and comes to Thessalonica, where he finds a synagogue of the Jews; there he preacheth three Sabbath-days; some believe, others persecute him. Leaving Thessalonica, he comes to Berea, and soon after arrives at Athens, disputes with the philosophers, and declares unto them that UNKNOWN GOD whom they had ignorantly worshiped. He converts Dionysius the Areopagite, and thence passeth to Corinth. |
| | XVIII, | Paul, at Corinth, meets with Aquila and Priscilla, not long before banished from Rome by the decree of Claudius. Here he continues a year and six months, and thence writes to the Thessalonians. |
| 55 | | Paul is accused by the Jews, and brought before Gallio, proconsul of Achaia, who refuseth to be judge in a controversy about religion, and so drives them away from the judgment-seat. |
| 56 | 18–23. | Paul departs from Corinth, and passeth to Ephesus, thence he sets out toward Jerusalem, that he may be at the feast; he lands at Cesarea, goes down to Antioch, and comes into the regions of Galatia and Phrygia, confirming the disciples in all those places. |
| 57 | XIX. | Paul returns to Ephesus, disputes daily in the school of Tyrannus, and continues preaching there, and the parts thereabout. |
| 58 | | He writes his epistle to the Galatians. |
| to 60 | | At Ephesus, Demetrius, a silversmith, jealous of his gain, raiseth a tumult against Paul, which is appeased by the town clerk. |
| | 1 Cor. I, 11. | About this time a schism ariseth in the church at Corinth, which |
| | XVI, 8. | causeth Paul (now in or about Ephesus) to write his first epistle to the Corinthians. |
| | Acts XX. | Paul departs from Ephesus, and comes into Macedonia, and |
| | 2 Cor. | gathers a contribution for the relief of the saints at Jerusalem. |
| | VIII, 1, | The apostle, having learned from Titus the success of his first, |
| | 2, 6, 19. | writes now his second epistle to the Corinthians. Out of Mace- |
| | 1 Cor. | donia he goes into Greece, and comes to Corinth, where he writes |
| | XVI, 5. | his epistle to the Romans. |
| | Acts XX, | Paul purposing to go directly from thence into Syria, that he |
| | 3, 4, | may carry the collections to Jerusalem, the Jews lay wait for him; he understanding this, thinks it best to return into Macedonia the |
| | | same way he came, and thence to pass into Asia. |
| | 6–35. | After the days of unleavened bread Paul sails from Philippi, and comes to Troas: there he restores Eutychus to life. Having passed through several cities of Greece, he arrives at Miletus; from thence he sends to call the elders of the Church of Ephesus, whom he earnestly exhorts to the performance of their duty. |
| | Acts. | Paul comes to Jerusalem, is apprehended in the temple, and |
| | XXI. | secured in the castle; he claimeth the privilege of a Roman, and |
| | XXII. | escapeth scourging. |
| | XXIII. | Paul pleadeth his cause before Ananias the high priest. The chief captain, understanding that above forty Jews had bound themselves under a curse neither to eat nor drink till they had killed him, sends him to Felix, the governor of the province, by whom he is imprisoned at Cesarea. |
| 62 | XXIV. | Paul is accused before Felix by Tertullus the orator: Felix goes out of his office, and, to gratify the Jews, leaves Paul in prison. Portius Festus succeeds him in the government. |

| After Christ | Acts. | |
|---|---|---|
| 62 | XXV. | The Jews come to Cesarea, and accuse Paul before Festus. He answereth for himself, and appeals unto Cæsar. King Agrippa comes to Cesarea, and Festus opens the whole matter to him. |
| | XXVI. | Paul makes his defence in the presence of Agrippa, who thereby is almost persuaded to be a Christian, and the whole company pronounce him innocent. |
| 63 | XXVIII. | Paul comes to Rome, is a prisoner at large, and preacheth there two years. |
| | | *Here ends the History of the Acts of the Apostles, written by St. Luke, St. Paul's beloved companion in his travels.* |
| 64 | | St. Paul, from Rome, writes his epistles :<br>To the Philippians.<br>To Philemon.<br>To the Colossians.<br>To the Ephesians. |
| 65 | Heb. XIII, 24. | About the latter end of this year St. Paul is set at liberty, and a little before his departure out of Italy into Asia he writes his epistle to the Hebrews. |
| | Tit. I, 5. | He preacheth the gospel in the isle of Crete, and leaves Titus there to set things in order, and ordain elders in every city. |
| 66 | | St. Paul writes his epistles :<br>To Timothy I.<br>To Titus.<br>To Timothy II. |
| | Euseb. | About this time the epistles of St. Peter, St. John, and St. Jude seem to be written. |
| 67 | Hist, Ec. l. 2, c. 24. | St. Peter and St. Paul are said to have suffered martyrdom at Rome toward the latter end of Nero's reign. |
| 70 | Luke XIX, 43, 44. | This year Jerusalem (according to Christ's prophecy) is besieged, taken, sacked, and burned, by Titus ; 1,100,000 of the Jews perish, 97,000 are taken prisoners ; besides an innumerable company that in other places of Judea kill themselves, or perish through famine, banishment, or other miseries. |
| 96 | | St. John is banished into the isle of Patmos by Domitian, and there receives and writes his Revelation.<br>After the death of Domitian, St. John returns to Ephesus, and at the request of the Church writes his Gospel. |

# ANALYSIS OF THE OLD AND NEW TESTAMENTS.

| | |
|---|---|
| BOOKS in the Old Testament.... | 39 |
| Chapters..... | 929 |
| Verses..... | 23,214 |
| Words..... | 592,439 |
| Letters..... | 2,728,100 |
| Books in the New Testament..... | 27 |
| Chapters..... | 260 |
| Verses..... | 7,959 |
| Words..... | 181,253 |
| Letters..... | 838,380 |

The middle chapter and the least in the Bible, is Psalm cxvii.

The middle verse is the 8th of Psalm cxviii.

The word *and* occurs in the Old Testament 35,543 times.

The same in the New Testament also occurs 10,684 times.

The word *Jehovah* occurs 6855 times.

The middle book of the Old Testament is Proverbs.

The middle chapter is Job xxix.

The middle verse is 2d Chron., chapter xx. the 17th verse.

The least verse is 1st of Chron., chapter 1, and 1st verse.

The middle book in the New Testament is 2d Thessalonians.

The middle chapters are Romans xiii and xiv.

The middle verse is Acts xvii, 17th verse.

The least verse is in John xi, verse 35.

The 21st verse, chapter vii, of Ezra, has all the letters of the alphabet.

The xixth chapter of the 2d of Kings and chapter xxxvii of Isaiah are both alike.

# TABLES OF SCRIPTURE MEASURES, WEIGHTS, AND COINS:

## WITH AN APPENDIX,

### CONTAINING THE METHOD OF CALCULATING ITS MEASURES OF SURFACE, HITHERTO WANTING IN TREATISES ON THIS SUBJECT.

BY THE RIGHT REVEREND RICHARD, LORD BISHOP OF PETERBOROUGH.

---

A MEASURE is a known quantity applied to another of the same kind that is less known, to make its dimensions better known, by help of numbers expressing the proportion that the known quantity bears to the unknown. The dimensions to be measured are three: 1. Mere *length*, which hath but one dimension. 2. *Surface*, which consists of length multiplied into breadth; so it hath two dimensions, as it were, interwoven; and this is always measured by some square surface already known, as by a square foot, or a square cubit, or any other square already known, by help of its side. *Moses* generally useth the square cubit. 3. *Solidity* or *capacity*, which hath three dimensions multiplied into each other: length, breadth, and height, or depth. This is measured by a known cube. From solidity ariseth weight in all sublunary bodies; and by weight we measure the value of coins. Therefore, I shall join weights and coins together in the fourth table.

*I use* = *to signify* Equal; : : *to express* Proportion; . *is called* Separatrix, *parting Decimals from Integers.*

---

## I. TABLE. Measures of Length.

*I express the Cubit, and its Parts, both by* Inch Measure *and by* Foot Measure; *which I deduce from Inches by this Proportion:*

Inch Measure. Foot Measure.

As 12.1 : : 21.888 1.824.

| | Inch Dec. | Foot Dec. |
|---|---|---|
| A Cubit is = to | 21.888 = | 1.824 |
| A Span the longer = ½ a Cubit | = 10.944 = | .912 |
| A Span the less = ⅓ of a Cubit | = 7.296 = | .608 |
| A Hand's breadth = ⅙ of a Cubit | = 3.684 = | .304 |
| A Finger's breadth = $\frac{1}{24}$ of a Cubit | = .912 = | .076 |

*Measures of many Cubits length I express only in Foot Measure.*

| | | Feet Dec. |
|---|---|---|
| A Fathom | = 4 Cubits = | 7.296 |
| *Ezekiel's* Reed | = 6 Cubits = | 10.944 |
| *Schœnus*, the Egyptian Line for Land Measure, which I think Scripture useth to divide Inheritances. *Psalm* xvi, 6, and lxxviii, 55. They used different Lengths, but the shortest and most useful was, | = 80 Cubits = | 145.92 |

*Herodotus* mentions a *Schœnus* just 300 times as long: I judge that all the greater were made in proportion to the least.

| | |
|---|---|
| The mile | = 4000 Cubits = 7296 Feet. |
| Stadium, $\frac{1}{10}$ of their Mile | = 400 Cubits = 729.6 |
| Parasang, 3 of their Miles | = 12,000 Cubits = 4 English Miles and 580 Feet. |

---

## II. TABLE. Measures of Surface.

*Moses* hath described these by square Cubits. I here express them reduced to our square Feet. The method of this reduction is taught in an Appendix. I first propose three clear examples given by *Moses;* secondly, I place six instances of greater difficulty.

THE CLEAREST EXAMPLES ARE:

I. The Altar of Incense. Only two sides of it, *viz.*, its length and breadth, are expressed by *Moses;* each of them is affirmed to be one Cubit. Yet he declares it was four-square: whence we collect that it was just one square Cubit. See *Exodus* xxx, 2,

Now, it is demonstrated in the Appendix that one *Jewish* square Cubit amounts to, in surface, three *English* square Feet, and about 47 square Inches.

II. The Table of Shew-bread, *Exodus* xxv, 23. It is affirmed to be two Cubits in length, and one in breadth. None doubt but it was rectangular, containing two *Jewish* square Cubits. These amount to six *English* square Feet, and above half, *viz.*, 94 square Inches.

III. The Boards of the Tabernacle, each 10 Cubits in length, and one and a half in breadth, *Exodus* xxvi, 16, being rectangular, must contain 15 square Cubits, *Jewish*. These are proved to contain very near 50 square Feet of *English* Measure.

THE MORE DIFFICULT CASES, RESERVED TO THE APPENDIX, ARE:

I. The Mercy Seat, whose surface is = 12 square Feet and a half.

II. A general method is taught of reducing any given number of *Jewish* Cubits to *English* square Feet.

III. The example of the 15 square Cubits in the Boards of the Tabernacle is made clearer.

IV. The Court of the Tabernacle, described *Exodus* xxvii, 18, is found to be just half the *Egyptian Aroura*, and to contain 1 Rood, 21 Perches, 27 square Feet, etc.

V. The whole *Aroura* is determined, and reduced to our *English* Measures, 3 Roods, 2 Perches, 55 square Feet.

VI. The suburbs, or Glebe Land, given to each city of the *Levites*, *Num.* xxxv, 3–5, is shown to be a square, on each of the four sides of every city, containing a million of *Jewish* square Cubits, or 100 *Arourae;* which amounts to, in each square, 76 Acres, 1 Rood, 26 Perches, 80 square Feet. Whence we collect that all the four Squares amounted to 305 Acres, 2 Roods, 1 Perch, besides 51 Feet square.

## III. TABLE. Measures of Capacity.

| | Wine Gal. | Pints. | Inch Solid. |
|---|---|---|---|
| Epha or Bath | 7 | 4 | 15 |
| Chomer, Homer in our translation | 75 | 5 | 7 |
| Seah, ⅓ of Epha | 2 | 4 | 3 |
| Hin = ⅙ of Epha | 1 | 2 | 1 |
| Omer, $\frac{1}{10}$ of Epha | 0 | 6 | 0.5 |
| Cab, $\frac{1}{18}$ of Epha | 0 | 3 | 10 |
| Log, $\frac{1}{72}$ of Epha | 0 | 0½ | 10 |
| Metretes of *Syria* (*John* ii, 6) = Cong. Rom. | 0 | 7⅛ | 0 |
| Cotyla, Eastern, $\frac{1}{100}$ of Epha | 0 | 0½ | 3 |

This Cotyla contains just 10 Ounces Avoirdupois of Rain water; Omer 100; Epha 1000; Chomer 10,000. So by these Weights all these Measures of Capacity may be expeditiously recovered very near exactness.

## IV. TABLE. Of Weights and Coins.

The *Jewish* Weights are reduced to the Standard Grains of our *Troy* Weight; whereof 438 are equal to the *Roman* ounce, and to our ancient *English Avoirdupois* ounce.

The value of *Jewish* and *Roman* Weights and Coins, at the present rate of Silver and Gold, expressed in Pence and Decimals of a Penny.

| | Grains Dec. | | Pence Dec. | | *s.* | *d.* | *q.* |
|---|---|---|---|---|---|---|---|
| Shekel is the original weight | 219 | = | 28.2875 | = | 2 | 4 | 1 |
| Bekah, ½ a Shekel | 109.5 | = | 14.1437 | = | 1 | 2 | ½X |
| Gerah, $\frac{1}{10}$ of Bekah | 10.95 | = | 1.41437 | = | 0 | 1 | ½X |
| Maneh = 100 Shekel wt | 21,900 | | | | | | |
| | | | | | *l.* | *s.* | *d.* |
| Maneh in Coin, = 60 Shekels | 13,140 | = | 1,697.25 | = | 7 | 1 | 5 |
| Talent of Silver, = 3000 Shekels | 657,000 | = | 84,862.5 | = | 358 | 11 | 10*ob.* |
| Talent of Gold the same Weight | | | | = | 5075 | 15 | 7*ob.* |
| The Golden Darics, *Ezra* ii, 69, seem to be coins of *Darius* the *Mede*. They weighed 12 Gerahs. | | = | 131.4 | = | 1 | 0 | 4 |

**Roman Money Mentioned in the New Testament.**

| | Pence. | Farthings |
|---|---|---|
| Denarius, Silver | 7 | 3 |
| Assis, Copper | 0 | 3 |
| Assarium | 0 | 1½ |
| Quadrans | 0 | ¾ |
| A Mite | 0 | ⅓ |

# AN APPENDIX

TO THE SECOND TABLE OF MEASURES OF SURFACE, DESCRIBED BY MOSES, SHOWING THE METHOD OF REDUCING THEM BY CALCULATION TO THE MEASURES USED IN ENGLAND, FOR THE BENEFIT OF THOSE THAT UNDERSTAND DECIMAL ARITHMETIC, AND DESIRE TO TRY THE REDUCTIONS GIVEN IN THE TABLE, OR TO MAKE FURTHER IMPROVEMENTS IN THIS KIND OF MEASURES.

1. *The Mercy Seat.*—I shall begin with Reduction of the Measures of the *Mercy Seat*, which was God's throne of Grace among the *Jews*. *Moses*, in *Exodus* XXV, 17, affirms that its length was two Cubits and a half, its breadth one Cubit and a half. The fractions adhering to its length and breadth make some difficulty to beginners in Arithmetic, which the Decimal way doth much abate. Supposing, therefore, what I have elsewhere proved, that the *Jewish* Cubit was in Foot measure 1.824; the length must be expressed in Foot measure, and Decimals thereof, 4.560. The breadth in like measure will be 2.736. Wherefore the product of these numbers multiplied into each other gives its surface 12.47,616; in number of its square Feet, and Decimals thereof, 12 square Feet, and very near half a square Foot; if the Decimals had been .50, it had been just a half a Foot. If we desire to express those Decimals of a Foot in square Inches, as is usual in *England*, we must multiply .47,616 by 144, the square Inches of a Foot, and the product will be 68.56,704; which shows that the Decimals we found amount to 68 square Inches, and about half an Inch more: we need not be nicer.

2. *A Square Cubit reduced to our Measure.*—2. In the Altar of Incense *Moses* describes the *Jewish* square Cubit, which must be reduced to our Foot measure, thus, $\frac{1824}{1824}$. The product of these numbers multiplied will be the upper surface of this altar, 3.326,976, that is, three square Feet, and .326,976 Decimals of a square Foot, which we may express by 47 square Inches, and a few Decimals of an Inch square inconsiderable.

3. *The Boards of the Tabernacle.*—3. *Moses'* description of the Boards of the Tabernacle, *Exod.* XXVI, 16, by 10 Cubits in length, and one and a half in breadth, naturally leads a man to discern in each Board's surface 15 *Jewish* square Cubits; because if we conceive a line drawn from the end of one Cubit at the bottom of the Board to the end of one Cubit at the top of the Board, this must needs be 10 whole square Cubits on one side of that line, and 10 half square Cubits (= 5 whole) on the other side of that line: here, therefore, are 15 square Cubits. The reduction of these into *English* square Feet is performed by multiplying 15, *viz.*, the number of Cubits given, into 3.326,976, the Feet and Decimals of one square Cubit, and the product will be 49.90,464, and that is very near to fifty square Feet; for those Decimals amount to above 130 square Inches: and little more than 13 square Inches would make it just 50 Feet, which abatement we need not here regard.

4. *The Court of the Tabernacle.*—4. Let us now go to the measure of the surface of land. But we will begin with the Court of the Tabernacle, the ground on which the Priests performed all the solemn public worship of *Israel* in *Moses'* time. The Area of this Court is described by *Moses*, *Exod.* XXV, 18, by its length 100 Cubits, and its breadth everywhere 50 Cubits. Wherefore this Area must be in *Jewish* measure 5000 square Cubits; for that is the product of 100 multiplied into 50. To reduce these 5000 *Jewish* Cubits into *English* square Feet, I must multiply 5000 into 3.326,976; the product is 16,634.88 *English* square Feet.

But in cases of such long numbers of Feet we use, for brevity's sake, and to help our memories, to reduce them into Perches, or Roods, or Acres, which contain known numbers of square Feet. A Perch contains 272¼ square Feet. A Rood is = to 10,890 square Feet. An Acre is = to 43,560 square Feet. It is plain that the number 16,634.88 hath not Integers equal to those of an Acre; but it hath enough to answer those in a Rood, and some overplus, therefore I must divide 16,634.88 by 10,890, which is a Rood. By such division, continued in the Decimal way, until I have a fraction of five or six places which is exact enough, I find the quote to be 1.527,537, which assures me that my number 16,634.88 hath but once entirely in it a whole Rood: but it hath moreover in it many Decimal parts of a Rood. These, therefore, I reduce to the Perches contained in them by multiplying them into 40, which is the number of Perches that make up a Rood: and cutting off six places from the product, which is 21.101,480; so I find there are 21 Perches entire, and the figures after the Separatrix are Decimals of a Perch. These, also, I mul-

tiply by 272.25, which are the square Feet and Decimals of a Perch. The product of this last multiplication, after eight places cut off from it by the Separatrix, because there were six places of Decimals in one of the multipliers, and two in the other, is 27.62,793,000. Hence I learn that there are therein but 27 entire Feet; all the eight Decimal places amount to little above half a Foot, and, therefore, I cast them away as inconsiderable in the measure of land. This method of reduction by multiplication of Decimals I find to be easier than the common way of reduction by division, and, therefore, I propose it to be used by beginners in this practice of surveying. So I find this Court to contain in *English* measure 1 Rood, 21 Perches, 27 Feet, and little more than a half a Foot squared. But reflecting upon *Moses'* measure by Cubits, and finding them to be precisely 5000 square Cubits, I observed that they were just half 10,000, which I had observed from *Herodotus' Euterpe* to be the Area of the *Egyptian Aroura*, by which their land was as generally measured as ours is by Acres and Roods. See *Herodot.* l. 2. c. 168. I called also to mind a passage in *Manetho*, an *Egyptian* Priest, cited by *Josephus* in his first book against *Apion*, where he affirms that *Manetho*, in his history of the reign, wars, and expulsion of the Pastors (whom *Africanus* affirms to be *Phœnicians*, or *Canaanites*, and *Josephus* vainly believed to be *Jews*), wrote out of the public Records of *Egypt*, that these Pastors made at *Abaris* a very large and strong encampment, that encompassed 10,000 *Arourœ*, sufficient to contain 240,000 men, and long maintain their cattle. Hence it appears, that not only the *Egyptians*, but the *Phœnicians* or *Canaanites* also, that had dwelt among them, and had reigned there during the time of six kings successively, used the measure of land called *Aroura*. Now, this was long before *Moses'* time: for the beginning of *Amosis* or *Tethmosis*, who expelled them out of *Egypt*, was very near the time of *Abraham's* death, as appears by the annals of the learned Primate of *Ireland*. Wherefore, I believe that *Moses*, who was skilled in all *Egyptian* learning, especially surveying, did of choice make the Court of the Tabernacle to be just half an *Aroura*, which was a known measure to him and his people, who had long dwelt in *Egypt*, and Divine Authority directed him so to do.

5. *The Reduction of an Aroura to English Measures.*—5. Because we have shown from *Herodotus* that an *Aroura* is the square of 100 *Jewish* or *Egyptian* Cubits, and 100 such Cubits may in *English* Foot measure be expressed by 182.4 *English* Feet, it follows that the square of this number will express exactly the number of the *English* square feet that are contained in an *Aroura*. Now by multiplication of 182.4 into itself, I find the product to be 33,269.76: therefore, I conclude that there are 33,269 square Feet entire, and .76 Decimals of a square Foot, in an *Aroura*. Now, to reduce these *English* square Feet into Roods, Perches, and the remainder of square Feet, I use the method used in the last paragraph: First, I divide them by 10,890, the square Feet in a Rood; and the quote I find 3.055,094, that is, 3 Roods, and .055,094 Decimals of a Rood. Secondly, I multiply those Decimals by 40, which is the number of Perches in a Rood; the product is 2.202,960. Hence I conclude there are therein two Perches, and .202,960 Decimals of a Perch. Thirdly, I multiply these last Decimals by 272.25, which are the square Feet of a Perch. The product is 55.25,586,000, that is, 55 entire square Feet; the eight places of Decimals amount to little above ¼ of a square Foot, therefore I reject them as inconsiderable in a measure of land. By all these reductions it is found that an *Aroura* is, in *English* measure, three Roods, two Perches, 55¼ square Feet. Hence it follows also that it is not well translated by *Jugerum*, for it is much larger: nor is it well in *English* called an Acre, for it is considerably less. To this place I refer the use of the lesser sort of χοῖνος, which yet is most convenient for the use of the *Egyptians*, and of the *Jews*, to measure out private men's inheritances by a line which was 80 Cubits long. For the length of this line will measure one side of an *Aroura*, if the other side be 125 Cubits long, which is the length of this line, and its half, and 5 Cubits above half of it, which they might easily mark on it by a knot or a ring. And by this means they might easily lay any number of *Arourœ* together, all of them rectangular and parallel to each other. Such lines I suppose for measure of inheritances are intimated, *Psalm* lxxviii, 55, and xvi, 6, etc.

6. *The Levite's Glebe.*—6. I shall conclude with an example amounting after reduction to a number of *English* Acres, which measure we have not yet reached to. This I take from *Num.* xxxv, 3, 4, 5, verses. There *Moses* describes what measure of land the *Levites* were to be allowed for their cattle, their goods, and all their beasts, on the north, east, south, and west sides of each of their cities. So that the city was to be in the midst of the land belonging to it. This land in our translation is called suburbs, because of its nearness to all their cities. But we must not thence imagine that it means houses and streets adjoining to their cities, in which sense we sometimes use the word suburbs. For *Moses* plainly tells us they were places for their several sorts of cattle to feed in, such as might also be orchards or gardens for fruit, or perhaps for a little corn, comprehended in the words *their goods*. These fields he limits by 1000 Cubits, which was just a quarter of an eastern mile, but amounts in mere length to 608 yards *English* measure, and, therefore, exceeds a quarter of an *English* mile by 168 yards in length. But it is certain that cattle cannot feed upon mere length, but this must signify the side of some surface of land bounded thereby, and we must have two sides of that surface given before we can find

the Area, or surface contained. Therefore, *Moses*, ver. 5, tells us, that on each side of each city they must measure 2000 Cubits, which will determine no surface, unless we understand it to mean the two sides of a square, bounded on every side by 1000 Cubits; these two sides multiplied into each other will produce a square that contains just a million of square Cubits, and that is a known and exact measure of just 100 *Arouræ;* and this shows that the 2000 Cubits mentioned ver. 5 are the two sides of that square, whereof the 1000 mentioned ver. 4 is one, and may be called the root of the square. This shows the agreement of the two different numbers. The reduction of this million of square Cubits will be performed by the same method that I have used before. Therefore, first, I express 1000 *Jewish* Cubits by 1824 *English* Feet, without any Separatrix, according to the principles owned in Decimal Arithmetic; and the square of that number will be 3,326,976, without a Separatrix. Secondly, I divide this number by 43,560, which are the square Feet of an Acre, and find the quote to be 76.376,859, which signify 76 entire Acres, and 376,859 Decimals of an Acre. Thirdly, to find what Roods are contained in these Decimals, I multiply them by four, the number of Roods in an Acre, and find the quote to be 1.507,436, which proves that there is but one Rood in them, and the six figures cut off by the Separatrix (because there were six Decimals in one of the multipliers), are all Decimals of a Rood. Fourthly, therefore, to find what Perches are in these last Decimals, I multiply them by 40, which is the number of Perches contained in a Rood. The product is 20.297,440; hereby I find there are 20 entire Perches, besides the Decimals of a Perch placed after the Separatrix. Fifthly, to find what square Feet are in those last Decimals, I multiply them by 272.25, which are the square Feet and Decimals in a Perch, the product is 80.97,804, which is 80 square Feet, and all the Decimals not amounting to a square Foot I reject as inconsiderable in measure of land. Thus we have found that this, and every other square on each side of every *Levitical City*, was prescribed to be 76 Acres, 1 Rood, 20 Perches, 80 square Feet in our measure, but was just a million of square Cubits in their measure.

To add the four squares belonging to one *Levitical City* together, the best way will be to take the first quote that we found in Acre measure, *viz.*, 76.376,859, and we must multiply it by four, and we shall find, by the method I have used, all the four squares together to amount to 305 Acres, 2 Roods, 1 Perch; we need not take notice of any lesser quantities in this case. We may also by this method find the sum of the Acres belonging to all the 48 cities of the *Levites*, and many other improvements in this kind of measuring surfaces. But I leave them to the industry of others.

# A TABLE OF TIME.

| | | |
|---|---|---|
| 1 | NISAN, *or* Abib..... | *March.* / *April.* |
| 2 | Jiar, *or* Zif..... | *April.* / *May.* |
| 3 | Sivan..... | *May.* / *June.* |
| 4 | Thammuz..... | *June.* / *July.* |
| 5 | Ab..... | *July.* / *August.* |
| 6 | Elul..... | *August.* / *September.* |
| 7 | Tizri, *or* Ethanim..... | *September.* / *October.* |
| 8 | Marchesuan, *or* Bul..... | *October.* / *November.* |
| 9 | Chisleu..... | *November.* / *December.* |
| 10 | Thebeth..... | *December.* / *January.* |
| 11 | Shebath..... | *January.* / *February.* |
| 12 | Adar..... | *February.* / *March.* |
| 13 | Veadar, *intercalary.* | |

## DAYS OF THE WEEK.

First day of the week..... *Sunday.*
Second day..... *Monday.*
Third day..... *Tuesday.*
Fourth day..... *Wednesday*
Fifth day..... *Thursday.*
Sixth day..... *Friday.*
Seventh day, *or* Sabbath..... *Saturday.*

## HOURS OF THE DAY.

The day, reckoning from sunrise, and the night from sunset, were each divided into 12 equal parts, called the 1st, 2d, 3d, 4th, etc. Hours.

## WATCHES.

The First Watch, *from sunset to the third hour of the night.*
The Second *or* Middle Watch, *from the third hour to the sixth.*
The Third Watch, *or* Cock-crowing, *from the sixth to the ninth.*
The Fourth, *or* Morning Watch, *from the ninth hour to sunrise.*

# A CHRONOLOGICAL INDEX

OF THE YEARS AND TIMES FROM ADAM UNTO CHRIST, PROVED BY THE SCRIPTURES, FROM THE COLLATION OF DIVERS AUTHORS.

---

*FROM Adam unto Noah's flood are years 1656.*

For Adam, being 150 years old, begat Seth.
Seth, being 105 years, begat Enos.
Enos, being 90 years, begat Cainan.
Cainan, being 70 years, begat Mahalaleel.
Mahalaleel, being 65 years, begat Jared.
Jared, at the age of 162, begat Enoch.
Enoch, being 65 years, begat Methuselah.
Methuselah, at the age of 187, begat Lamech.
Lamech, being 182 years, begat Noah.
Noah, at the coming of the flood, was 600 years old, as appeareth in the 7th chapter of Genesis.
The whole sum of the years are 1656.

*From the flood of Noah unto Abraham's departing from Chaldea were 422 years and ten days.*

For the said flood continued one whole year and ten days.
Shem (who was Noah's son) begat Arphaxad, two years after that.
Arphaxad begat Salah, when he was 35 years old.
Salah, being 30 years old, begat Eber.
Eber, at the age of 34, begat Peleg.
Peleg, being 30 years, begat Reu.
Reu, being 32 years, begat Serug.
Serug, being 30 years, begat Nahor.
Nahor, being 29 years, begat Terah.
Terah, being 130 years, begat Abram.
And Abraham departed from Chaldea when he was 70 years old.
These, accounted, are 422 years and 10 days.

*From Abraham's departing from Ur in Chaldea, unto the departing of the children of Israel, are 430 years, gathered as followeth:—*

Abraham was in Charran five years, and departed in his 75th year.
Begat Isaac when 100 years old, in the 25th year of his departing.
Isaac begat Jacob, when 60 years old.
Israel was in Egypt 220 years.
Then deduct 80 years from this; for so old was Moses when he conducted the Israelites from Egypt.
So the rest of the years, that is to say, 130, are divided between Amram and Kohath
Then Kohath begat Amram, at the age of 67 years.
Amram, being 65 years, begat Moses, who, in the 80th year of his age, departed with the Israelites from Egypt.
So this chronology is the 430 years mentioned in the 12th chapter of Exodus, and the 3d chapter to the Galatians.

*From the going forth of the Israelites from Egypt, unto the first building of the temple, are 480 years, after this chronology and account.*

Moses remained in the desert or wilderness forty years.
Joshua and Othniel ruled forty years.
Ehud, 80 years.
Deborah, 40 years.
Gideon, 40 years.
Abimelech, 3 years.
Tola, 23 years.
Jair, 22 years.
Then they were without a captain, until the 18th year of Jephthah.
Jephthah, 6 years.
Ibzan, 7 years.
Elon, 10 years.
Abdon, 8 years.
Samson, 20 years.
Eli, judge and priest, 44 years.
Samuel and Saul reigned 40 years.
David was king 40 years.
Solomon, in the 4th year of his reign, began the building of the temple.
These are the 480 years mentioned in the first Book of Kings, Chapter 6.

*From the first building of the temple, unto the captivity of Babylon, are 419 years and a half.*

Solomon reigned yet 36 years.
Rehoboam, 17 years.
Abijam, 3 years.
Asa, 41 years
Jehoshaphat, 25 years.
Jehoram, 8 years.
Ahaziah, 1 year.
Athaliah, the queen, 7 years.
Jehoash, 40 years.
Amaziah, 29 years.
Uzziah, 52 years.
Jehoahaz, 16 years.
Ahaz, 16 years.
Hezekiah, 29 years.
Manasseh, 55 years.

Amon, 2 years.
Josiah, 31 years.
Jehoahaz, 3 months.
Eliakim, 11 years.
Jehoiachin, Jechonias, 3 months.
And here beginneth the captivity of Babylon.
The sum of these years is 419 and 6 months.
Jerusalem was re-edified, and built again, after the captivity of Babylon, 70 years.
The captivity continued 70 years.
The children of Israel were delivered the first year of Cyrus.
The temple was begun to be built in the second year of the said Cyrus, and finished in the 46th year, which was the 6th year of Darius. After that Darius had reigned 26 years, Nehemiah was restored to liberty, and went to build the city, which was finished in the 32d year of the said Darius.
All the years from the building of the temple again, are 26 years.
The whole sum of years amount to 70.

*From the re-edifying of the city, unto the coming of Christ, are 483 years, after this chronology.*

It is mentioned in the ninth chapter of Daniel, that Jerusalem should be built up again, and that from that time unto the coming of Christ are 69 weeks, and every week is reckoned for 7 years. So 69 weeks amount to 483 years: for from the 32d year of Darius unto the 42d year of Augustus, in which year our Saviour Christ was born, are just and complete so many years; whereupon we reckon, that from Adam unto Christ are 3974 years, 6 months, and ten days; and from the birth of Christ unto this present year, is 1876.
Then the whole sum and number of years, from the beginning of the world unto the end of the year of our Lord God, 1876, are 5850 years, 6 months, and the said odd ten days.

---

# A TABLE

## OF OFFICES AND CONDITIONS OF MEN.

PATRIARCHS, or *Fathers of Families*, such as *Abraham*, *Isaac*, and *Jacob*, and his sons.

*Judges*, temporary Supreme Governors, immediately appointed by God over the children of *Israel*.

*Kings*, and they either of the whole nation, or, after the falling off of the ten tribes, of *Judah* or *Israel*.

*Elders*, senators, the LXX, or Sanhedrim.

*Officers*, provosts, sheriffs, or executioners.

*Judges*, inferior rulers, such as determined controversies in particular cities.

*Israelites*, Hebrews, descendants from *Jacob*.

*A Hebrew of Hebrews*, an Israelite by original extraction.

*A Proselyte of the Covenant*, who was circumcised, and submitted to the whole law.

*A Proselyte of the Gate*, or *Stranger*, who worshiped one God, but remained uncircumcised.

### OFFICERS UNDER THE ASSYRIAN OR PERSIAN MONARCHS.

*Tirshatha*, or Governor appointed by the kings of Assyria or Persia.

*Heads of the captivity*, the chief of each tribe or family, who exercised a precarious government during the Captivity.

### UNDER THE GRECIAN MONARCHS.

*Maccabees*, the successors of *Judas Maccabeus*, high-priests, who presided with kingly power.

### UNDER THE ROMAN EMPERORS.

*Presidents*, or Governors, sent from Rome with imperial power.

*Tetrarchs*, who had kingly power in the fourth part of a province.

*Proconsuls*, or Deputies of Provinces.

*Centurions*, captains of a hundred men.

*Publicans*, or Tax-gatherers.

### ECCLESIASTICAL OFFICERS, OR SECTS OF MEN.

*High-priests*, who only might enter the Holy of Holies.

*Second Priests*, or *Sagan*, who supplied the High-priest's office in case he were disabled.

*High-priests for the War*, set apart for the occasion of an expedition.

*Priests*, Levites of the sons of Aaron, divided into twenty-four ranks, each rank serving weekly in the temple.

*Levites*, of the tribe of *Levi*, but not of Aaron's family; of these were three orders, Gershonites, Kohathites, Merarites, several sons of Levi.

*Nethinims*, inferior servants to the Priests and Levites (not of their tribe), to draw water and cleave wood, etc.

*Prophets*, anciently called Seers, who foretold future events, and denounced God's judgments.

*Children of the Prophets*, their disciples or scholars.

*Wise Men*, called so in imitation of the eastern Magi, or Gentile philosophers.

*Scribes*, writers and expounders of the law.

*Disputers*, that raised and determined questions out of the law.

*Rabbins*, or *Doctors*, teachers of Israel.

*Libertines*, freedmen of Rome, who, being Jews or Proselytes, had a synagogue or oratory for themselves.

*Gaulonites*, or *Galileans*, who pretended it unlawful to obey a heathen magistrate.

*Herodians*, who shaped their religion to the times, and particularly flattered Herod.

*Epicureans*, who placed all happiness in pleasure.

*Stoics*, who denied the liberty of the will, and pretended all events were determined by fatal necessity.

*Simon Magus*, author of the heresy of the Gnostics, who taught that men, however vicious their practice was, should be saved by their knowledge.

*Nicolaitanes*, the disciples of *Nicholas*, one of the first seven Deacons, who taught the community of wives.

*Nazarites*, who, under a vow, abstained from wine, etc.

*Nazarenes*, Jews professing Christianity.

*Zelots*, *Sicarii*, or murderers, who, under pretence of the law, thought themselves authorized to commit any outrage.

*Pharisees*, separatists, who, upon the opinion of their own godliness, despised all others.

*Sadducees*, who denied the resurrection of the dead, angels and spirits.

*Samaritans*, mongrel professors, partly heathen, and partly Jews, the offspring of the Assyrians sent to Samaria.

*Apostles*, missionaries, or persons sent; they who were sent by our Saviour; from their number, were called *The Twelve*.

*Bishops*, *Elders*, or *Presbyters*, spiritual overseers.

*Deacons*, officers chosen by the Apostles to take care of the poor.

---

# JUDEA, PALESTINE, OR THE HOLY LAND.

PALESTINE is bounded on the north by mount Libanus, or Lebanon, which separates it from that part of Syria anciently called Phœnicia; on the east by mount Hermon, which divides it from Arabia Deserta; on the south by Arabia Petrea; and on the west by the Mediterranean sea, or sea of Syria.

This country received the name of Palestine from the Philistines, who dwelt on the sea-coast: it was called Judea, from Judah: and it is termed the Holy Land, being the country where Jesus Christ was born, preached his holy doctrines, confirmed them by miracles, and laid down his life for mankind. Palestine is about one hundred and eighty-five miles in length, and generally eighty in breadth; it is situated between 31° and 33° 40′ north latitude.

The climate of Palestine is, during a great part of the year, very hot. The easterly winds are usually dry, though they are sometimes tempestuous; and those which are westerly are attended with rain. The heat here might be expected to be excessive; yet mount Libanus, from its uncommon height, is covered all the winter with snow.

The first rains, as they are called, generally fall about the beginning of November; and the latter rains in the month of April. In the country round Jerusalem, if a moderate quantity of snow falls in the beginning of February, and the brooks soon after overflow their banks, it is thought to forebode a fruitful year; and the inhabitants make rejoicings upon this occasion, as the Egyptians do with respect to the Nile: this country is seldom refreshed with rain during the summer season.

The rocks of Judea are, in many places, covered with a soft chalky substance, in which is enclosed a great variety of shells and corals. The greatest part of the mountains of

Carmel, and those of Jerusalem and Bethlehem, are overspread with a white chalky stratum. In mount Carmel are gathered many stones, which, being in the form of olives, melons, peaches, and other fruit, are imposed upon pilgrims, not only as those fruits petrified, but as antidotes against several diseases.

With respect to the rivers of the country, the Jordan, called by the Arabs Sceriah, is not only the most considerable, but, next to the Nile, is the largest, either in the Levant or in Barbary. It has its source at the bottom of mount Libanus, or Lebanon, and is formed from the waters of two fountains, which are about a mile distant from each other. One of them lies to the east, and is called Jor; the other, which is exposed to the south, is named Dan. The confluence of the two streams is found near the ancient city of Cesarea Philippi, which is at present only a village, and called Beline. The river takes a course between the E. and S., and, after running seven miles, falls into the lake Samochon or Mathon, at present called Huletpanias, about six miles in length, from north to south, and nearly four in breadth, from east to west. The Jordan issues from this lake, and flows through a great plain, passing under a stone bridge called Jacob's bridge, consisting of three arches well constructed. The river then continues its course as far as the lake of Tiberias, near the ancient cities of Chorazin and Capernaum, where it mixes with its waters. When it issues from this lake, which is about eighteen miles in length and eight in breadth, it takes the name of Jordan major, dividing Peros from Samaria, the plains of the Moabites from Judea, and receiving the waters of the Dibon, the Jazer, the Jacob, and the Carith. After being augmented by these streams, in a course of sixty-five miles from the lake of Tiberias, or sea of Galilee, it discharges itself into the Dead sea. The Jordan, in the rainy seasons, overflows its banks to the distance of more than four miles; and, on account of the inequality of the ground, forms two or three channels. Its current is extremely rapid, and the water always muddy: but when taken from the river, and put into any kind of vessel, it very soon clarifies, and is sweet.

The Dead Sea is a name of modern date; the ancients call it the lake of Asphaltites, the sea of Sodom, the Salt sea, the lake of Sirbon; the Arabs name it Bahheret-Lut; that is, the sea of Lot. It is about fifty miles in length, and ten in breadth. The lofty mountains of the country of the Moabites are on the eastern side, and discharge into it the waters of Arnon and the Jaret. On the west and south it is bounded by very high mountains also. It is likewise on the west that the brook Cedron, which rises at Jerusalem, empties into this sea.

We are informed that this vast lake was covered formerly with fruit trees and abundant crops, and that from the bosom of the earth, now buried under its waters, arose the superb cities of Sodom, Gomorrah, Admah, Zeboiim, and Segor. No plants of any kind grow in this lake. The bottom of it is black, thick, and fœtid. Branches of trees which fall therein become petrified in a little time. The Dead sea produces a kind of bitumen, which may be found floating on the surface, like large lumps of earth. This bitumen is a sulphurous substance, mixed with salt; it is as brittle as black pitch, is combustible, and exhales, while burning, a strong and penetrating smell. The ancient Arabs used it for smearing and embalming their dead, to preserve them from perishing. The mountains near this sea produce a kind of black stone, which, when polished, has a beautiful lustre.

Acra, or Acre (now called St. John de Acre, and which the Arabs call Accho, or Akka), is one of the places from which the Israelites could not expel the ancient Canaanites, and was formerly reckoned among the ancient cities of Phœnicia. It is also known by the name of Ptolemais. The situation is advantageous: on the north and east it is encompassed by a fertile plain; on the west, it is washed by the Mediterranean; and on the south by a large bay, which extends from the city as far as mount Carmel. It contains little more than a few cottages, and heaps of ruins. The residence of the bashaw of the province is at this place.

To the south of Acre is Sebasta, the ancient Samaria, the capital of the ten tribes after their revolt from the house of David. It is seated on a long mount, which rises in a fruitful valley, and is now converted into gardens.

A little further to the south is Naplosa, the ancient Sychem, which stands in a narrow valley, between mount Ebal on the north, and Gerizim on the south. At a small distance from Naplosa is Jacob's well, famous for Christ's conference with the woman of Samaria.

Jerusalem is encompassed with hills, so that the city seems as if situated in an amphitheatre; there are few remains of the city as it appeared in Christ's time; the situation being changed; for mount Sion, the highest part of ancient Jerusalem, is almost excluded: while the places adjoining to mount Calvary are nearly in the centre. This city, which is about three miles in circumference, is situated on a rocky mountain, on all sides of which are steep ascents, except toward the north. The walls are not strong, nor have they any bastions. The city has six gates. There are supposed to be about twelve or fourteen thousand inhabitants in Jerusalem.

Jasa, the ancient Joppa, is the port where the pilgrims disembark. They generally arrive in November, and repair without delay to Jerusalem.

Bethlehem, also called Ephrata, and the city of David, is famous for being the birthplace of Christ. It is about two miles to the S. E. of Jerusalem, on the ridge of a hill, at present only an inconsiderable place.

Raha, the ancient Jericho, is eighteen miles N. E. of Jerusalem, situated in a plain six or seven leagues long, by three wide, surrounded by a number of barren mountains.

Habroun, or Hebron, is twenty-four miles S. of Bethlehem. The Arabs call it El-Kahil, the well-beloved. It is situated at the foot of an eminence, on which are some remains of an ancient castle.

Nazareth, now only a small village, is on the top of a high hill.

Cana of Galilee, otherwise called Cana Minor, celebrated for the miracle wrought by Christ, of changing the water into wine, is nothing more than a small village, with very few inhabitants.

Sidon, called by the Turks Sayd, is situated on the sea-coast. It was anciently a place of great strength, and had a very extensive commerce. Though it is still populous, and a place of considerable trade, it has fallen from its ancient grandeur. Its exports consist in silks, with raw and spun cotton, the manufacturing of which employs most of the inhabitants, amounting to about five thousand. The city is defended by an old castle, built in the sea.

Tyre, called by the Turks Sour, is about twenty miles to the south of Sidon. It was once very celebrated for its purple, called the Tyrian dye, produced from a shell-fish. This city was, in ancient times, the centre of an immense commerce and navigation, and the nurse of arts and sciences. The ancient city stood, originally, on an island, joined to the main land by a mole, the remains of which appear at present. It has two harbors; that on the north side is very good; but the other is choked up with ruins. The present inhabitants are only a few poor fishermen, who live in vaults and caves.

Cesarea was at first called Strabo's Tower, and was the capital of Palestine. This city was divided into two parts by a little hill, whereon was erected a temple dedicated to Cesar.

Jericho is situated in a large plain, about twenty miles long and ten broad, bounded by a variety of mountains on the southwest, the west, and north; it is at present inhabited by a few miserable Arabs.

The Mount of Forty Days is situated on the north side of the plain of Jericho: the summit is covered neither with shrubs, trees, nor earth, but consists of a solid mass of white marble; it is very difficult and dangerous to ascend, the path leading by a winding course, between two dismal abysses. This mountain is one of the highest in the province, and one of its most sacred places. It takes its name from the rigorous fast which Christ observed here. From this mount may be seen the hills of Arabia, the country of Gilead, the country of the Ammonites, the plains of Moab, and that of Jericho, the river Jordan, and the whole extent of the Dead Sea. Opposite to Jericho, beyond Jordan, rises Mount Nebo.

Mount Carmel, on the south side of the bay of Acre, projects at one part into the sea, forming a great promontory, called the point of Carmel. There are a number of grottoes, gardens, and convents, on this mount; as also many cisterns for receiving the rain-water. On this mountain was a fortress called Ecbatane.

Mount Tabor is most delightfully situated, rising amidst the plains of Galilee, distant about twelve miles from the city of Tiberias; it is distinguished by different names, as Itabyrion, Taburium, and by the Arabs Gibel-el-Tor. It is in appearance like a sugar-loaf, and is covered from the top to the bottom with small trees.

Palestine, which comprehends the ancient country of Canaan, and was occupied by nine tribes of Israel, has experienced many and severe revolutions; the extreme fertility of the country, and its many advantages and happy situation, induced the neighboring and powerful kingdoms to attempt its subjection; most of them succeeded in reducing to obedience and slavery the peaceable inhabitants: the Persians, Saracens, Syrians, and Romans, have alternately been masters for a time, and then obliged to yield to superior force: they treated the conquered with the utmost barbarity, and committed the greatest devastation and slaughter; not even sparing old or young, women or helpless children. Thus it continued changing its ferocious masters, until, in the twelfth century, the Turks taking Cesarea, the whole country fell into their possession, and has continued under their power ever since. The innumerable scenes of blood and desolation exhibited in this country have changed it from that happy, fruitful, and prosperous state, so beautifully described in Deuteronomy, to an almost uninhabited desert, and heap of ruins; few traces of its ancient splendor remain; and confusion and doubt hang over all the researches of the inquirer.

The present masters exercise unlimited and tyrannical authority over their slaves in Palestine, keeping the miserable inhabitants in the utmost subjection; governing them by Caliphs and Bashaws, with rods of iron; and holding them in the most deplorable ignorance and superstition.

# CONTENTS.

## PART I.

PAGE.

A Comprehensive Dictionary of Art, Science and Literature, arranged Alphabetically.....1 to 370

## PART II.

PAGE.

A Brief Biographical Dictionary, Alphabetically Arranged.....685 to 739

## PART III.

PAGE

Abandonment (marine insurance)...477
Abbreviations Used in Writing and Printing.....659
Aborigines of North America.....554
Abstract (in business).....477
Acceptance.....477
Acceptor.....486
Accounts.....477
Account Current.....478
Account, Sales.....478
Acknowledgment of Deed.....499
Acquittance.....478
Acre, Different Measurements of....536
Actuary.....478
Adjustment (in insurance).....478
Adjustment (of accounts).....478
Administrator.....478
Adoption of the Constitution.....558
Ad Valorem Duty.....478
Advances (in finance).....478
Adventure (in marine).....479
Africa, Ancient and Modern Geographical Names of.....384
Africa, Cities and Towns in.....388
Africa, Rivers of.....386
Agencies, Mercantile.....479
Agent.....479
Agio.....479
Agreement between Landlord and Tenant.....480
Agreement for Sale of Land.....479
Agreement for sale of Grain.....480
Agreement with a Clerk or Salesman for Services.....480
Alabama, Insolvent and Assignment Laws of.....603
Amendments to the Constitution of the United States.....565
Americanisms.....419
American Cities, Rate of Mortality of.654

PAGE

American Petroleum.....654
American Wars.....608
Ancient Geographical Names.....383
Annuity.....481
Arbitration.....481
Analysis of the Old and New Testament.....778
Assyrian and Persian Officers.....785
Arbitration Bond.....481
Arbitration of Exchanges.....481
Area and Population of the Earth....613
Area and Population of the United States.....574
Arizona, Insolvent and Assignment Laws of.....603
Arkansas, Insolvent and Assignment Laws of.....603
Armies of the World.....625
Army of the United States.....586
Arrests (when allowed in debts).....536
Articles of Copartnership.....510
Aryan Languages, Divisions of..... 2
Asia, Ancient and Modern Geographical Names of.....384
Asia Minor, Cities and Towns in....388
Asia, Rivers in.....386
Assets.....481
Assignments.....482
Assignee.....482
Assignment Laws.....603
Assignment of Account.....482
Assignment of Bond.....482
Attachment (in law).....536
Attorney, Power of.....482
Attorney-General, Salary of.....580
Audit.....482
Auditor of Railroad Accounts Salary of 580
Average (in shipping transactions) ..483
Average of Payments.....483
Avoirdupois Weight.....628

PAGE
Bailment....484
Balance (in Accounts)....484
Balance-Sheet....484
Balancing Accounts....484
Balance of Trade....484
Banco....484
Banker....485
Bankrupt....485
Barratry....485
Bears and Bulls....485
Bill of Adventure....479
Bill of Entry....486
Bill of Exchange....436
Bill of Lading....489
Bill of Parcels....490
Bill of Sale....490
Bill of Sight....490
Bond....490
Bond Creditor....492
Bonded Goods....492
Business, Guide to....477
Bond Debt....492
Bonus....492
Book Debts....492
Bottomry....492
Broker....492
Broker's Contracts....492
Bulk....493
Bullion....493
Business Law....522
Bank Account, To Open and Keep...528
Bookkeeper's Proof....530
Banks, History of....531
Bank Rules....531
Bank Laws....532
Bank Discount....537
By-Laws for a Social Club....553
Battles and Losses of the Revolutionary War....555
Battles of the War of 1812....570
Boats and Vessels (Names and Technical Terms)....617
Business Vocabulary....353
British Imperial Measure....629
Bays of the World....651

Common Errors in Speaking and Writing Corrected....453
Clerk, Agreement with....480
Capital....493
Cargo....493
Cash Accounts....493
Cash Credit....493
Cashier....493
Center of Population....395
Charter Party....493
Check....494
Circular Note....494
Clearing a Vessel....494
Clearing (in Banking)....494
C. O. D....494
Collateral Security....494
Commission....494
Commissioner....495
Commission-Merchant....495
Compound Interest....495
Composition....495
Composition with Creditors....495

PAGE
Chronological Index, from Adam to Christ....784
Conditions of Sale....496
Consignee....496
Consul....496
Consulage....496
Contraband....496
Contract....496
Contractor....496
Contract for Building....496
Conveyance of Property....497
Conveyancer....497
Coupons....497
Credit....497
Creditor....497
Currency....498
Customs and Excise....498
Copartnership, Articles of....510
Cash-Book, Form of....526
Commercial Paper....532
Checks....534
Checks, Laws Relating to....534
Commencement of Lawsuits....535
Contracts....535
Counterfeit Money....538
Counterfeit National Bank Notes....538
Counterfeit National Notes, Official List of....540
Canada Bills, Counterfeits of....541
Canadian Failed Banks....542
Counterfeit Gold Coins, To Detect...544
Counterfeit Silver Coins, to Detect..544
Constitution of the United States...559
Chronological History of the United States....592
Coal Production of the World....622
Counterfeit United States Bonds and Interest-Bearing Notes....544
California Insolvent and Assignment Laws....603
Colorado Insolvent and Assignment Laws....603
Connecticut Insolvent and Assignment Laws....603
Commissioner of Patents, Salary of..580
Commissioner of General Land Office, Salary of....580
Commissioner of Pensions, Salary of.580
Commander of Marine Corps, Salary of....580
Commissioner of Agriculture, Salary of....580
Commissioner of Indian Affairs, Salary of....580
Commissioner of Education, Salary of 580
Cities and Towns, Ancient Names of..386
Christian Names of Men....379
Christian Names of Women....381
Classical and Mythological Names...638
Churches in the United States....652
Chronological Table....630
Colleges and Universities in the United States....627
Cloth Measure....628
Commerce of Nations....624
Canals of United States....584

Discovery and Discoverers of America.554

PAGE
Declaration of Independence.....556

Debts, Revenues, Expenditures, and Commerce of Nations.....624
Debts of the Principal Cities and Towns of the World.....610
Dictionary of Musical Terms.....373
Due-Bill.....489
Days of Grace.....498
Debenture.....498
Debit.....499
Debtor.....499
Deed.....499
Del Credere.....500
Demurrage.....500
Deposit.....500
Direlict.....500
Deviation (in Shipping).....500
Director.....500
Discount.....500
Discounting Bills of Merchandise....500
Dividend.....501
Document Bills.....501
Draft.....501
Drawback (in Exports).....501
Dunnage.....501
Daily Savings at Compound Interest.505
Dissolution of Partnership.....511
Day-Book, Form of.....523
Director of Geological Surveys, Salary of.....580
Dry, or Winchester Measure.....629
Director of the Mint, Salary of.....580
Dakota Insolvent and Assignment Laws.....604
Delaware Insolvent and Assignment Laws.....604
Dominion of Canada.....620

Ecclesiastical Officers, or Sects.....785
Expectation of Life at All Ages.....623
Expenditures, Revenues, Debts, and Commerce of Nations.....624
Europe, Ancient and Modern Geographical Names.....383
Embargo.....502
Entrepot.....502
Export.....502

False Pronunciation Corrected.....422
Fifth Age of the World.....754
First Age of the World.....745
Foreign Names of Persons and Places, To Pronounce.....447
Fourth Age of the World.....750
French Names, To Pronounce.....448
Factor.....479
Firm.....502
Free Port.....502
Freight.....502
Farmers' Club, To Organize.....551
Foreign Bills of Exchange.....487
Form of Bill of Lading.....490
Five Cent Pieces, Counterfeit.....544
Foreign Coins, Value of.....609
Florida Insolvent and Assignment Laws.....604

PAGE
German Names, To Pronounce.....450
Greek, Latin and Scripture Proper Names, To Pronounce.....446
Grain, Agreement for the Sale of....480
Guide to Business.....477
Garbles.....502
Garnishment.....502
Good Will.....502
Guarantee.....502
General Partnership.....512
Gold and Silver, Certain Test for....536
Gold Coin, Counterfeit, To Detect....544
Guardian, Receipt on Account for....515
Great Britain, Cities and Towns in...386
Gaul, Cities and Towns in.....387
Greece, Cities and Towns in.....387
Grecian Officers.....789
Georgia Insolvent and Assignment Laws.....604
Gulfs, Ancient Names of.....384
Germany, Rivers in.....385
Gaul, Rivers in.....385
Greece, Rivers in.....386
General Councils of the Church.....652
Geographical Discoveries.....631
Geographical Vocabulary.....371
Geometrical Definitions.....372

History of the United States Flag....567
History of the World from the Creation to the Present Time.....630
Heads of the Principal Nations of the World.....619
Highest Mountains in the World....650
Homesteads on Public Lands.....585
Holder of a Draft, Duty of.....532
House, Mercantile.....503
Holy Land, Topography of.....786

Italian Names, To Pronounce.....450
Inaccurate Terms and Expressions..398
Inland Bill of Exchange.....487
Import.....503
Indemnity.....503
Indenture.....503
Index to the Holy Bible.....746
India, Description of.....786
Indorse.....503
Injunction.....503
Insurance.....503
Interest.....504
Interest Table at 6 per cent.....504
Interest Table at 7 per cent.....505
Investment.....505
Invoice.....505
Interest Policy.....513
Interest Rules.....536
Interest Laws of the Different States.601
Insolvent, Assignment and Homestead Laws of the Various States..603
Issue and Redemption of Silver and Minor Coins.....545
Interest, Legal Rate of.....521
Idaho Insolvent and Assignment Laws 604
Illinois Insolvent and Assignment Laws.....604
Indiana Insolvent and Assignment Laws.....605

PAGE
Iowa Insolvent and Assignment Laws.605
Italy, Cities and Towns in.....387
Interest Tables.....645
Illyricum, Rivers in.....386
Italy, Rivers in.....386
Islands, Ancient Names of.....385
Interest, How it Increases.....629

Jetsam.....506

Kansas Insolvent and Assignment Laws.....605
Kentucky Insolvent and Assignment Laws.....605
Knots and How to Make Them.....394

Latin Proper Names, To Pronounce..446
Letter of Advice.....479
Land, Agreement for the Sale of.....479
Landlord and Tenant.....480, 535
Lazaretto.....506
Lay Days.....506
Lease.....506
Lease of House.....507
Letter of Credit.....507
Letter of License.....507
Liabilities.....507
Lien.....507
Lighterage.....508
Liquidation.....508
Lloyd's Register.....508
Log-Book.....508
Laws Relating to Checks.....534
Laws Relating to Wills.....535
Limitation of Actions in Different States.....602
Ledger, Form of.....526
Laws and Decisions Relating to Drafts.....533
Limited Partnership.....512
Lost Time Calculations.....536
Lease of a Farm.....528
Legal Rate of Interest in Different States.....521
Laws Relating to Business.....522
Longest Rivers of the World.....651
Lakes, Ancient Names of.....384
Linear Measure.....628
Legal Weight of a Bushel.....649
Lakes of the World.....651
Louisiana Insolvent and Assignment Laws.....605
Levites Glebe.....787

Mercantile Agencies.....479
Manifest (in Shipping).....508
Marking Goods, Method of.....508
Measurement Goods.....508
Merchantable Goods.....509
Mercantile and Commercial Goods..509
Monopoly.....509
Mortgage.....509
Mensuration.....537
Multiplication, Rapid.....537
Military Strength of the United States during the Rebellion.....599

PAGE
Minor Coins, Issue of.....546
Minor Coins, Redemption of.....546
Maryland Insolvent and Assignment Laws.....605
Mercy Seat, Measurement of.....781
Mechanical Movement.....741
Metric System of Weights and Measures.....3
Massachusetts Insolvent and Assignment Laws.....605
Michigan Insolvent and Assignment Laws.....606
Minnesota Insolvent and Assignment Laws.....606
Mississippi Insolvent and Assignment Laws.....606
Missouri Insolvent and Assignment Laws.....606
Montana Insolvent and Assignment Laws.....606
Macedonia, Cities and Towns in.....387
Mesopotamia, Cities and Towns in..388
Mexican War, Battles of.....572
Merchant Shipping of the World....626
Mythological and Classical Names...688
Mountains of the World.....650
Musical Terms, Dictionary of.....373
Maine Insolvent and Assignment Laws.....605

Note on Demand.....483
Note on Time.....488
Note not Negotiable.....488
Note, Negotiable in Merchandise....489
Negotiable Note.....489
Negotiable Paper.....509
Notary.....509
Notice of Dissolution of Copartnership.....511
National Banks.....531
National Bank Blank Bills, List of Stolen.....543
National Bank Notes, Official List of Counterfeit.....540
Navy of the Revolution.....569
Naval Battles of the War of 1812.....571
Navy of the United States.....588
Navy Yards of the United States.....588
Navies of the World.....626
National Debts, Expenditures, and Commerce of Nations, per head...627
Nails, Sizes of.....537
Number of Plants and Quantity of Seed to Use.....650
Newspapers and Periodicals in the United States.....655
Nautical Vocabulary.....371
Nebraska Insolvent and Assignment Laws.....606
Nevada Insolvent and Assignment Laws.....606
New Hampshire Insolvent and Assignment Laws.....606
New Jersey Insolvent and Assignment Laws.....606
New Mexico Insolvent and Assignment Laws.....606

PAGE
New York Insolvent and Assignment Laws....607
New York and Brooklyn Bridge....390
North Carolina Insolvent and Assignment Laws....607

Objectionable Words and Phrases...398
Oceans of the World....651
Ohio Insolvent and Assignment Laws.607
Old and New Testaments, Analysis of.778
Oregon Insolvent and Assignment Laws....607
Odd Arithmetical Question....538
Occupations of the People of the United States....658

Principles of Correct Pronunciation..422
Partnership....509
Partnership Settlements....511
Pass-Book, Uses of....512
Per cent....512
Permit....513
Policy, Insurance....513
Policy, Interest....513
Policy Wager....513
Posting (in Bookkeeping)....513
Post-Obit Bond....513
Premium....513
Price-Current....513
Price-List....513
Principal (in Business)....514
Procuration....514
Pro forma....514
Prompt (in Business)....514
Pro rata....514
Public Meetings, To Organize and Conduct....548
Presidents of the Continental Congress....558
Public Debts of the United States.573,576
Paper Money of the United States....573
Population of the United States....574
Population of the Towns and Cities of the United States....578
Public Lands of the United States...582
Parlimentary Proceedure....396
Pay of the Army of the United States.587
Pay of the Navy of the United States.589
Principal Towns and Cities of the United States....610
Population and Debts of Cities, &c., of the United States....612
Population of the United States, by Races....615
Popular and Electoral Vote for President, 1880, of the Various States. 616
Prices of Commodities for 53 years..653
Petroleum, Statistics of....654
Palestine, Description of....791
Palestine, Towns in....388
President of the United States, Salary of....580
Postmaster-General, Salary of....580
Power of Attorney....482
Promissory Notes....488
Pennsylvania Insolvent and Assignment Laws....607
Population of the Earth....580

PAGE
Quarantine....514
Quotations (in Stocks)....514

Rebate (in Business)....514
Receipts....514
Receipt on Account....515
Receipt in Full....515
Receipt for Cash Payment....515
Receipt in Full of all Demands....515
Receipt in Full of Account....515
Receipt Rendered....515
Receipt in Full for Goods....515
Receipt, Sold and Delivered without a Bill....515
Receipt to Guardian for Payment on Account of his Ward....515
Receipt of Lading for Wagon....515
Receipt for Stock put out to Winter..516
Re-exchange....516
Register (in Shipping)....516
Re-insurance....516
Release for Freight....516
Remittance....516
Rente....516
Returns....516
Reversion....516
Rules for Detecting Counterfeit Money....542
Revolution, Troops Furnished in....555
Receipts and Disbursements of United States Government....614
Railroads of the World....621
Revenues, Expenditures and Commerce of Nations....624
Rate of Mortality of American Cities.654
Rivers, Ancient Names of....385
Representatives in Congress, Salary of....580
Rhode Island Insolvent and Assignment Laws....607
Rate of Mortality....623
Rapid Multiplication....537
Religions of the World....580
Races of the World....580
Rate of Mortality in American Cities.654
Rivers of the World....651
Roman Officers....785

Salesman, Agreement with....480
Short Form of Deed....499
Surety, Form of, For Landlord and Tenant....481
Special Partnership....512
Second Age of the World....746
Scripture Weights, Measures and Coins....779
Scripture Time-Table....783
Stock, Receipt for Wintering....516
Salvage....516
Sample....516
Scrip....517
Securities....517
Set-off (in Law)....517
Share....517
Ship's Papers....517
Shipping Articles....517
Short Exchange....517

PAGE
Sinking Fund.....518
Solvent.....518
Specie.....518
Specification.....518
Standard.....518
Staple.....518
Sterling Coin.....518
Stock, Varieties of.....518
Stock Exchange.....518
Stoppage in Transitu.....519
Subpœna (in Law).....519
Supercargo.....519
Suspension of Payment.....519
Suits, Commencement of.....535
Summons at Court.....536
Shoemakers' Measure.....537
Stolen National Bank Blank Bills....543
Silver Coin, Counterfeit, to detect...544
Silver Coin, Issue of.....545
Silver Coin, Redemption of.....546
Social Club, By-Laws for.....553
Scripture Proper Names, To Pronounce.....446
Settlers of the United States.....555
Settlement of the United States.....555
Signers of the Declaration of Independence.....558
State Laws Relating to Limitation of Action.....602
Summer Heat in Various Countries..608
Shipping of the World.....626
Square Measure in the United States.628
Solid Measure in the United States..628
Seas of the World.....651
Statistics of Churches in the United States.....652
Seas, Ancient Names of.....384
Sarmatia, Rivers in.....385
Spain, Towns and Cities in.....386
Spain, Rivers in.....385
Syria, Towns and Cities in.....388
Salaries of the Principal Civil Officers of the United States.....580
Secretary of State, Salary of.....580
Secretary of the Treasury, Salary of.580
Secretary of the Interior, Salary of...580
Secretary of the Navy, Salary of.....580
Secretary of War, Salary of.....580
Sixth Age of the World.....766
Seventh Age of the World.....768
Speaker of the House of Representatives, Salary of.....580
Superintendent of the Census, Salary of.....580
Superintendent of the Naval Observatory, Salary of.....580
Superintendent of Patents, Salary of.580
Superintendent of the Nautical Almanac, Salary of.....580
South Carolina Insolvent and Assignment Laws.....607
Savings Banks.....531
Straits, Ancient Names of.....384

Third Age of the World.....748
Tables of Scripture Measures, Weights &c.....774
Tabernacle, Measurement of.....781

PAGE
Table of Officers and Conditions of Men.....785
Traveler, Commercial.....520
Tret.....520
Test for Gold and Silver.....536
Troy Weight (U. S.).....628
Tennessee Insolvent and Assignment Laws.....607
Texas Insolvent and Assignment Laws.....607
Tale Quale.....519
Tare.....519
Tariff.....519
Tender (in Money).....519
Time Bargain.....520
Tonnage.....520
Troops Furnished by each State during the Rebellion.....591
Theological Seminaries in the United States.....658

United States Coin, Penalty for Mutilating.....545
United States Coin, Table Showing when Coined, Weight, &c.....547
United States Senators, Salaries of...580
United States Judges, Salaries of....580
United States Ministers, Salaries of..580
Universities and Colleges in the United States.....627
Utah Insolvent and Assignment Laws.607
Ullage.....520
Underwriter.....520
Usance.....520
Usury.....520

Vermont Insolvent and Assignment Laws.....607
Virginia Insolvent and Assignment Laws.....608
Vendor.....521
Voucher.....521
Vessels, Technical Terms of.....617
Vice-President, Salary of.....580
Vocabulary of Business.....353

Words Commonly Mispronounced...429
Wills.....535
Wager Policy.....513
Wagon, Receipt for Lading.....515
Warranty.....521
Wharfage.....521
Warehousing.....522
Warrant of Attorney.....522
Ways and Means.....522
Wages Table by the Day.....666
Wages Table by the Week.....657
Weights and Measures of United States and Other Countries.....628
Wine Measure.....629
War of 1812, Battles of.....570
Washington Territory Insolvent and Assignment Laws.....608
West Virginia Insolvent and Assignment Laws.....608
Wisconsin Insolvent and Assignment Laws.....608
Wyoming Insolvent and Assignment Laws.....608

UNIVERSITY OF ILLINOIS-URBANA
3 0112 004795644